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Co-hosted by the
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The Centre for Business and Economic Research (CBER) works assiduously to contribute to progress and prosperity through research and managerial excellence. CBER strives to be an important knowledge conduit via its academic journals, international conferences and bespoke consultancy and training services.

4th International Conference on Globalisation, Entrepreneurship and Emerging Economies (ICGEEE), Dhaka, Bangladesh

ICGEEE-2019 CONFERENCE COMMITTEE MEMBERS

4ᵗʰ International Conference on Globalisation, Entrepreneurship and Emerging Economies (ICGEEE), Dhaka, Bangladesh

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Centre for Business & Economic Research (CBER) was founded in London in 2006 with the aim of inspiring, recognizing and supporting excellence in business and Economic research Currently, the Centre has three main areas of endeavour: organizing an annual cycle of international academic conferences, producing academic journals, and offering bespoke consultancy projects both in the United Kingdom and further afield. CBER works assiduously to facilitate international collaboration, providing an independent and credible source of advice, as well as contributing to academic debate and research. The Centre is fortunate to have a truly international following and is committed to encouraging knowledge sharing, foresight planning and greater interaction between academics, policy makers, thought leaders and those engaged in diverse commercial activities. Through both its own researchers and a network of specialists internationally it is well placed to provide targeted consultancy work aimed at providing fresh insight and understanding that is underpinned by creditable research methods and a thorough and objective approach.

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Daffodil International University (DIU), a prime initiative of Daffodil Family-a leading Information Communication Technology (ICT) & educational conglomerate of Bangladesh, has commitment to the nation for the expansion of capacity in higher education with a view to building self-reliant Bangladesh. DIU is recognized in independent government assessments as one of the top-ranking universities in Bangladesh. It started with 67 students registering in the first batch and within 15 years more than 20,000 students have been enrolled and around 700 full time faculty members are engaged in teaching and research at DIU. Currently, a total of 550 students from 10 different countries are studying at DIU. It has established academic links with more than 300 prestigious universities from over 50 countries around the world. It has a blend of well-experienced teachers having foreign degrees and a galaxy of young, energetic faculty members who are entirely and passionately devoted to teaching their students in the best and modern fashion.

The university intends to focus on entrepreneurial education initiatives to make a poverty free self-sufficient society. It has produced more than 1200 entrepreneurs worldwide, and established Business Incubator, Startup Market, Entrepreneurship Guidance Program, Venture Capital Limited, Startup Restaurant & Café etc. to promote and encourage young new entrepreneurs. DIU has achieved a prestigious position in QS Asia University Rankings-2019. The university has been ranked 6th amongst all the universities of Bangladesh. This recognition indicates DIU's continuous commitment to quality education and research at tertiary level of Bangladesh as well as expected employment of graduates of this University.

To keep pace and to be at par with the developing world in the field of maritime higher studies and research, Bangabandhu Sheikh Mujibur Rahman Maritime University, Bangladesh, the first Maritime University of the country, was established by the BSMRMU, Act No. 47 of 2013. The University started its journey as the 37th public university of the country, the 3rd Maritime University in South Asia and the 12th Maritime University in the world upholding the motto "We Strive for Maritime Excellence".

The university is currently at its formative stage. We gradually plan to develop this university as the highest seat of learning for the students who would aspire to explore the maritime world for the greater interest of the humanity. The university would conduct both graduate and post- graduate courses on various fields, which includes subjects related to Safe Operation, Handling and Management of Ships, Port and Shipping Administration, Maritime Technology, Naval Architecture, Oceanography, Marine Science, Hydrography, Ocean Engineering, Offshore Engineering, Coastal Engineering, Maritime Laws, Maritime Security and Strategic studies, Business Studies, Information and Computer technology, Environmental Science etc. The university will have the dual role of running higher level courses for students, as well as regulating the affiliated institutions for their graduate/post graduate programmes. Presently endeavours are being made to open courses by the next academic session at hired campuses on subjects related to Port/Shipping Management, Logistics/Engineering Management. Upon having a permanent campus, new graduate and post- graduate programmes on specialized fields will be offered.

The Centre for Innovative Leadership Navigation (CILN) *recognizes that a 'knowledge deficit' exists and as such, this puts individuals, companies, institutions and occasionally governments at risk. By seeking to address the issues people in leadership roles face, CILN endeavours to provide the map and compass so to speak which when used correctly can prove not only useful, but invaluable. CILN works assiduously to be a vehicle for knowledge dissemination and a mean to access the latest research across a range of important areas of human endeavour. CILN organises and sponsors a series of international conferences that enable academics, business practitioners, policy makers and thought leaders to meet, share their ideas and learn from one another. CILN is committed to raising awareness of key issues, as well as endeavouring to encourage greater foresight and forward planning. By offering bespoke training CILN strives to play a positive and purposeful role, one that has the potential to have a lasting impact*

CONFERENCE PROCEEDINGS
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Ocean governance for sustainable maritime development in the Bay of Bengal

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Abstract
The oceans are the main component of global economic growth because of its potentiality for food, minerals and energy that could be transmitted to the global markets by international trade. However, world's Oceans need caring attention and integrated response. There is a progressive degradation of ocean health caused by IUU fishing, marine pollution and unplanned coastal development. Recently, Developing Countries have looked to the ocean as a new economic frontier and developed growth policies based on the concept of blue economy. A blue economy roadmap is essential to provide an integrated approach to ocean-based sustainable development, which brings together economy, environment and society being closely linked with the UN Sustainable Development Goals 2030 (SDG). Making the transition to a Blue Economy would entail fundamental and systemic changes in the policy-regulatory-management-governance framework using the tools of an ecosystem-based Marine Spatial Planning (MSP). Since the Bay of Bengal has gained enormous economic and strategic significance connecting South and South East Asia, the littoral countries of the Bay of Bengal show huge trends of economic development due to their increasing importance on the ocean-based economy. But today our development patterns are often undermined and diminished due to lack of appropriate ocean governance measures whereas various policies are either poorly implemented or lacks supervision. So, a regionally integrated management and governance system is the demand of the day in order to ensure a sustainable maritime development in the Bay of Bengal region. The study explores the strategic and economic significance of the Bay of Bengal highlighting the nexus of Blue Economy and sustainable maritime development. The paper analyzes the challenges of ocean governance and harvest blue economy benefits. The various steps taken for maritime development of Bangladesh in overall ocean economy. There are many challenges but a properly planned blue economy and ocean policy can bring to the developing countries of this region substantial benefits of economic and social development in the years ahead.

Stripping the ocean. territorialisation of the seas and oceans. case studies of the sea of Azov, the Gulf and the South China Sea

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Abstract

Global warming is leading to accelerated melting of polar ice – indeed, all ice – and is thus causing sea levels to rise. In the legal, political, commercial, strategic and emotional context, however, the reverse is happening. When International Law was being formulated in the 17th century, jurists, especially Hugo Grotius, tended to agree that the oceans, covering 70 percent of the planet's surface and plunging to eleven miles' depth, were the 'global commons' and the sea bed, then inaccessible, the common inheritance of mankind

The paper covers this critical issue through three case studies of recent political, geo-political and strategic developments. The first is the case of the Sea of Azov and the Crimean Bridge, President Putin's 'Project of the Century'. A bridge across the 19-mile wide Kerch Strait linking Crimea to mainland Russia to the east was first mooted in 1903 but was never built. Temporary bridges built by both sides in the 1941-45 Great Patriotic War were quickly demolished by string currents and ice. In 2010 Russia and Ukraine signed an agreement to build a bridge spanning the Kerch Strait via Tuzla island. With the Russian annexation (or re-annexation, depending on your point of view) of Ukraine in 2014 the Russians moved fast. The massive project was completed in May 2018 President Putin himself drove the first truck down the four-lane motorway from mainland Russia to Crimea. A twin-track railway will be opened shortly. Although advertised as a means of getting goods to Crimea more cheaply and encouraging tourism, there can be little doubt that the 'Project of the Century' (so far) has a profound geo-strategic purpose. It makes Russian Crimea totally independent of supply from mainland Ukraine to the north and cuts off two major Ukrainian ports on the sea of Azov. Shortly after the bridge was opened the Russians impounded Ukrainian warships heading for those Ukrainian ports inside the Sea of Azov. The construction of the bridge has helped ensure that the Sea of Azov, although it contains areas still categorised as 'high seas', is effectively a Russian lake.

The second case study is the Strait of Hormuz through which one third of the world's oil transported by sea and one-fifth of the world's oil in total passes. At its narrowest point the Strait is only twenty nautical miles wide so to pass through it one must be in either Iranian or Omani territorial waters. This places huge constraints on both international merchant marine trade and on naval forces. Whereas UNCLOS permits 'innocent passage' by warships openly transitting territorial waters with no hostile intent to the states owning those waters, other activities – such as submarines transiting submerged – are, technically, illegal.

The third case study is the South China Sea and the numerous concrete bases, harbours, fortifications, towers and airstrips being built by China on no fewer than ten sandbanks. The motive for these constructions is clear. China will use the 'rights' under UNCLOS, to extend its Territorial Sea out to twelve nautical miles beyond what it now claims is its territory. China and the US Navy have been playing games on this basis in the South China Sea for some years. The evidence of Chinese construction is clearly visible from satellite photographs.

In summary, the 'high seas' are being stripped away to reveal a seabed of territorial states' domains. The strategic, political and commercial implications are global, massive and profound.

Maritime trans-boundary crime and its impact on the regional security issues

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Abstract
Maritime trans-boundary crimes are becoming prevalent day by day across the maritime nations for its monetary values and easiness. For maritime nations, now it is a key challenge to combat such types of crimes. International, national and regional communities have already expressed their concerns for the frequency of the trans-boundary crimes and taken some measures to minimize its random commission, though these initiatives have already proved insufficient to eradicate this business motivated heinous crimes. This study, firstly, focuses the multiple types of trans-boundary crimes that are faced by the nation-states as an alarming rapid growing threat to the security, political and social integrity of the nation and the fundamental freedoms and rights of the inhabitants. It, then measures the consequences of the commission of these crimes on the regional securities. To achieve these objectives, the study consulted mainly the secondary documents like scholarly articles, books, legislations, international legal instruments and a limited scale of primary data in an analytical approach. The findings of this investigation and analysis of the secondary materials reveal the multiple types of trans-boundary crimes are frequently committed in this region and create a big threat for the regional securities. This paper contributes to take effective steps to combat and minimize substantially the trans-boundary crimes by the coastal states through regional and international cooperation.

Shipping and port security: Challenges and legal aspects

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Abstract

The current trend of globalization provided intense impact on access to resources, raw materials and markets expedited by modern maritime transport system comprising shipping and port operations. Security of ships and port facilities, thus, discernibly an enormous challenge to the globalized world. The international maritime transport system is vulnerable to piracy, terrorism, illegal drug trafficking, gun-running, human smuggling, maritime theft, fraud, damage to ships & port facilities, illegal fishing and pollution, which can all disrupt maritime supply chains to the heavy cost of the global economy.

This paper discusses the nature and effect of the security threats to the international shipping and port industry with impact on the international trade & commerce and governmental economy, taking into consideration of the emerging geopolitics, Sea Lines of Communication, chokepoints of maritime trading routes and autonomous ships. The existing legislative measures against maritime security appraised and evolution of automation and digitalization of shipping and port operations taken into consideration.

Studying the contemporary maritime transport reviews, existing legislation and the threat scenarios to the shipping and port operations, the paper identifies further advancement to the existing maritime security legislation in respect of piracy and terrorism at sea, and recommends amendment to the International Ship and Port Security (ISPS) Code under the SOLAS Convention.

1 Introduction

Globalization is based on the unrestricted movement of commodities, resources, information and people enhancing international trade and commerce through connectivity between the places of production and places of consumption. Connectivity depends on modes and means of global transportation.

Nearly three quarters of the planet is covered by water, 90% of the world's commerce travel by sea and most of the world's population lives within a few hundred miles of the oceans and seas. Hence the maritime transportation can be considered as the backbone of globalization and extremely vital for all "just-in-time" economies. There is a special and privileged relationship of global commerce and maritime transport. Shipping and ports are pivotal to the maritime transport and one of the global concerns for international business and logistics is the security of shipping and ports to maintain the integrity of supply chain. Security threats to world shipping and port facilities present an enormous challenge to the globalization in terms of international commerce.

Not mooting into the security aspects of the full maritime domain, this paper focuses on the nature of maritime crimes and maritime security threats which influence the shipping and port operations affecting the globalized trade and commerce. The security threats for the shipping and port operations and the challenges posed by them are identified and discussed. Thereafter, the characteristics of the security threat, the challenges posed by them and their respective legal aspects are described.

In conclusion, the nature and significance of the security threats to shipping and ports summarized, and this paper identifies the inadequacy and ineffectiveness of the existing maritime

security legislations. In view of the automation and digitalization of shipping and port operations, the new regime of cybersecurity is introduced.

2 Security threats to shipping and ports
2.1 Maritime piracy and armed robbery at sea

The basic common terms in the definition of maritime piracy and armed robbery at sea are 'any illegal act of violence or detention or any act of depredation, or threat thereof, committed for private ends and direct against a ship or against persons or property on board such a ship'. The difference being the piracy takes place outside the jurisdiction of any State and the armed robbery takes place within a State's internal waters, archipelagic waters and territorial sea. [*UNCLOS 1982 Article 101 and IMO Resolution A.1025(26)*]

Since ancient times, maritime transport holds the "comparative advantage" over land transportation. Piracy is interrelated with the very first human efforts to conquer & tame the seas. As a "business model", it significantly hampers the "freedom of navigation" and trade. The modern times piracy is considered in 2000s when Pirates based in the failed state of Somalia terrorize cargo ships and yachtsmen in the Indian Ocean. The acts of piracy include the attempted boarding ships, boarding ships, firing upon and hijacking of ships.

Relevant statistics of piracy for the period between 2003 and September 2019 are discussed in the next pages.

According to the website *(www.statista.com)*, the height of piracy was in 2010 with 445 incidents and still hundreds of pirate attacks are taking place with the number being 201 in 2018. Pirate attacks largely occur in a few "hotspots" around the globe and are driven by several factors ranging from corruption and institutional weakness to fishing conditions and a lack of economic opportunities.

Presently, the major hotspots of piracy are in the Gulf of Guinea, Africa and the Gulf of Aden. In Southeast Asia, those hotspots are the Sulu and Celebes seas as well as the Malacca Strait. Piracy in the South East Asia – mostly in Malacca Strait, Singapore Strait, Indonesian waters and in Bay of Bengal waters are limited to petty theft, stealing of valuables and some hostage taking and is not a great economic concern.
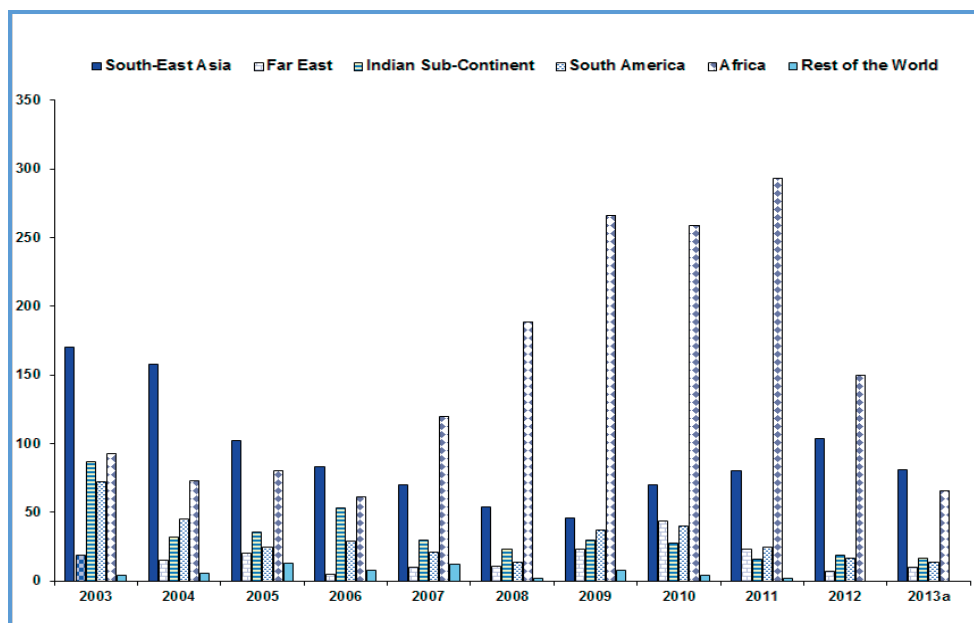
Actual and attempted attacks by region, 2003–2013* (*Number of incidents*)
*Source: UNCTAD secretariat based on ICC International Maritime Bureau. Piracy and Armed Robbery Against Ships, Various Issues. * From 1 January to 30 September 2013*

Category	2015	2016	2017	2018	2019
Attempted	21	15	11	32	10
Boarded	154	111	92	107	95
Fired upon		10	13	13	10
Hijack	15	5	5	4	4
Sub total	**190**	**141**	**121**	**156**	**119**
Total at year end	**246**	**191**	**179**	**201**	

Comparison of the type of attacks, January – September 2015 – 2019
Source: ICC IMB Piracy and Arm Robbery Against Ships-Report – 01 JAN to 30 SEP 2019

The Gulf of Guinea remains increasingly dangerous for seafarers. Reports of attacks in waters between the Ivory Coast and the Democratic Republic of Congo more than doubled in 2018, accounting for all six hijackings worldwide, 13 of the 18 ships fired upon, 130 of the 141 hostages taken globally, and 78 of 83 seafarers kidnapped for ransom. (IMB 2018*)*
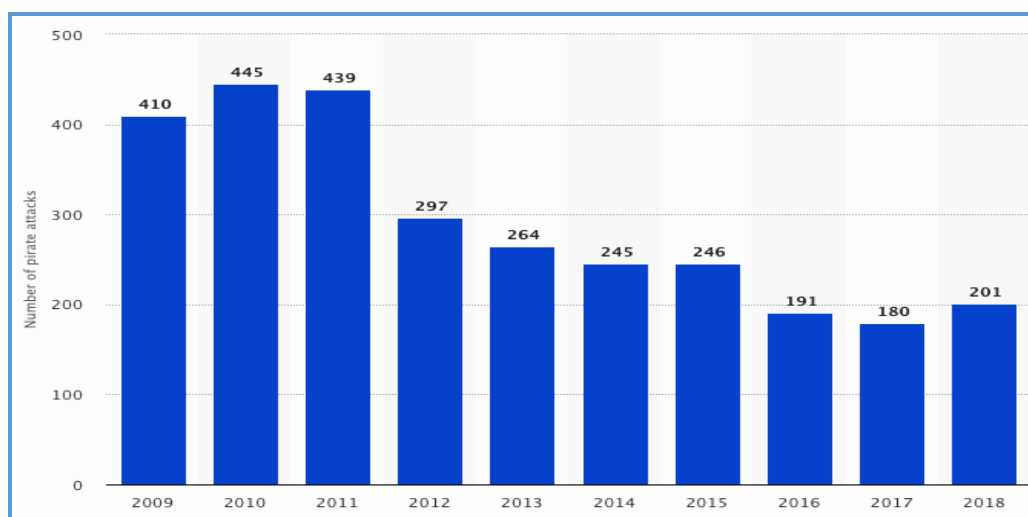
Number of pirate attacks against ships worldwide from 2009 to 2018
Source: https://www.statista.com/statistics/266292/
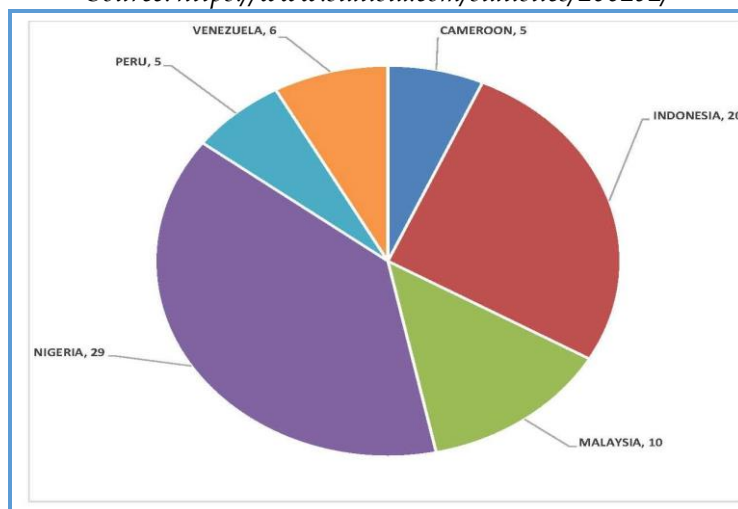
The six locations contributed to 63% of the total attacks reported in the period JAN – SEP 2019
Source: ICC IMB Piracy and Arm Robbery Against Ships-Report – 01 JAN to 30 SEP 2019

2.1.1 Challenges posed by piracy and armed robbery

While the shipping companies are mostly immediately affected financially and lose confidence of seafarers, the reputation and business of ports are undermined by maritime piracy. Ports are the facilities associated with the transfer or interchange of waterborne commerce and are 'gateways' to international trade and provide non-cargo related services to commercial ships, naval ships, offshore crafts, yachts & pleasure crafts and fishing vessels.

Cost Factor	2010	2011	2012
Ransom	$176 million	$160 million	$31.75 million
Insurance	$460 million - $3.2 billion	$635 million	$550.7 million
Re-routing Ships	$2.4 - $3 billion	$486 million - $681 million	$290.5 million
Security Equipment and Guard	$363 million - $2.5 billion	$1.064 - $1.16 billion	$1.65 - $2.06
Naval Forces and Military Operations	$2 billion	$1.27 billion	$1.09 billion
Prosecutions and Improsonment	$31 million	$16.4 million	$14.89 million
Counter Piracy Organizations	$19.5 million	$21.30	$24.08 million
Cost to Regional Economies	$1.25 billion	N/A	N/A
Labour	N/A	$195 million	$471.6 million
Increased Speed	N/A	$2.71 billion	$1.53 billion
Total Estimated Cost	**$7 - $12 billion**	**$6.6 - $6.9 billion**	**$5.7 - $6.1 billion**

The economic costs of maritime (Somalia) piracy
Source: One Earth Future (OEF), Oceans Beyond Piracy☐ Project (OBP): The Economic Cost of Piracy 2010; The Economic Cost of Somali Piracy 2011; The Economic Cost of Somali Piracy 2012

Ports in the high-risk areas lose profit due to loss of traffic and high operating costs. Even the ports may lose their business partners in sharing the port facilities. Maritime piracy not only harms the maritime nations and coastal states but also affects the landlocked countries critically dependent on transport services through the ports of neighbouring countries. In the globalized trading system, this is a matter of international concern.

Cost of trade is also affected by maritime piracy when the ships carrying cargo are intercepted by the pirates and delivery of the cargo at destination is delayed. Sometimes the cargo gets damaged due to prolonged storage condition. The cost of cargo transportation and insurance premium increases when ships are diverted to avoid high-risk and unstable areas.

International energy trade (Oil & Gas) can be affected by pirate activities by disruption or delays in energy trade flow resulting in increased energy prices and can have serious implication of the energy intensity economic activities in the global trading system.

Oil companies in the Gulf of Guinea are investing heavily in maritime security to protect oil installations. These additional security expenditures borne by oil companies could however undermine the feasibility of oil related investment projects, discouraging potential investigators, raise the cost of doing business and, in some cases, drive out some established companies.

By threating the profitability of energy exploration, maritime piracy puts at risk existing and future investment both in terms of level and quality – in the West African oil industry as well as in the East Africa. *(UNCTAD: Maritime Piracy Part I 2014)*

Fishing is an important resource for many countries. Disturbance in the fishing activity by piracy can create significant social and economic effect on the local and regional economy.

The maritime tourism industry using pleasure crafts, yachts, diving and the cruise liners are affected regionally by the pirate activity and affects the economy of the countries providing such tourism activities.

2.2 Maritime terrorism

The FBI's definition (*www.lafd.org*) for the terrorism is "the unlawful use of force or violence against persons or property to intimidate or coerce a Government, the civilian population, or any segment thereof, in furtherance of political or social objectives".

The terrorism inflicted in maritime domain is the maritime terrorism and is one of the significant maritime security threats. There are two aspects of maritime terrorism significant to the shipping industry – manifestation of terrorism and crucial effect of maritime terrorism.

The two important elements in respect of manifestation of the threat of maritime terrorism are – motive and opportunity. The influence of geography leading to traffic density, slow steaming of ships, good weather conditions, nearness to coast etc. provide opportunity for perpetrating maritime terrorism.

Depending on the motive, maritime terrorism can take various forms and consequences thereof:

Smuggling chemical, biological, and radiological, explosive materials in containers and carry out attack at the vital port facilities disrupting the international trade.

Concealing weapon or explosives in small crafts and attack ships and shore establishments affecting maritime transportation system;

Hijacking or seizing a vessel by force to gain political, financial, religious or separatist motives causing disruption of vessel movement in that area and putting the seafarers onboard in adversity.

Sinking a ship in a narrow sea lane and disrupt commercial trade and shipping movement.

Placing mines or floating explosive devices on the hull of ships and achieve the intention of sabotage disrupting ship movement.

Use small boats to destroy oil tanker or oil terminals influencing the global oil price and causing oil pollution for the coastal state.

Causing mass killing onboard cruise liners or passenger ferries upsetting the business.

Cyber-attack onboard the computer system and realizing ransom or diversion of the vessel causing collision or grounding.

Terror on board Achille Lauro (1985) first well known act of terrorism at sea when four heavily armed terrorists representing the Palestine Liberation Front (PLF) hijacked the Italian cruise ship. They shot and killed a disabled American 69-year-old tourist.

On the evening of 11 July 1988, the cruise ship "City of Poros" was attacked by a Palestinian gunman, who killed eight tourists before dying himself in a subsequent explosion and 98 people were left injured. Preceding the attack on the ship, a car bomb explosion at a pier killed two people. The subsequent investigation into the operation uncovered evidence which pointed at both the Abu Nidal Organisation.

On the morning of 12 October 2000, United States Navy guided-missile destroyer USS Cole, docked in the harbor of Aden (Yemen) for a "routine" fuel stop, was attacked by a small fiberglass boat that was carrying C4 explosives and two suicide bombers. Seventeen (17) sailors were killed on the spot, with thirty-nine (39) more injured as a result of the blast. This attack was organized and directed by the terrorist organization al-Qaeda. The attack caused the short-term collapse of international shipping in the Gulf of Aden; it is also interesting to note that this resulted into Yemen losing $3.8 million a month in port revenues.

(DNV GL & WMU Rev. 001)

On 12 May 2019, Saudi Arabian flagged vessels 'Amjad' and 'Al Marzoqah', the Norwegian flagged vessel 'Andrea Victory' and the UAE flagged vessel 'A.Michel', were attacked off the coast near Fujairah and suffered sabotage damage, and on 13 June 2019, the Marshall Islands flag 'Front Altair' and Panama flag 'Kokuka Courageous' were attacked, suffering hull damage and fire, while located in the Sea of Oman near the Strait of Hormuz.

On 19 July 2019, the British flagged Swedish owned oil tanker "Stena Impero" was detained by Iran's Islamic Revolution Guard Corps while passing through international waters in the Strait of Hormuz. Iran accused the vessel of colliding with a fishing boat and failing to respond to calls, but the ship's owners said there was no evidence. The UK said it deployed a Royal Navy frigate to come to the tanker's aid and warned Iranian authorities that their actions were illegal, but the frigate was unable to reach the scene in time. The vessel was taken in the Strait of Hormuz two weeks after an Iranian tanker "Grace 1" was held off Gibraltar with the help of the UK Royal Marines. The "Stena Impero" was released by the Iranian authorities on 27 September 2019.

(BBC online news 27 September 2019)

2.2.1 Challenges posed by maritime terrorism

Commercial shipping is a complex multinational network and a part of universal supply chain system. The principal shipping routes pass through several narrow straits and canals, and large number of ships use these international sea lines of communication (Malacca Strait, Strait of Hormuz, Strait of Bab El Mandeb, Suez Canal, Strait of Bosporus et al.) carrying significant quantity of commodities destined for the countries in demand. These are vessel transit chokepoints and any maritime terrorist incident in one or more of these sea lines of communication would disrupt energy and commodity supply affecting the global economy with the consequence of downturn in the international shipping.

The acts of terrorism can lead to global political decisions in terms of sanctions to the suspected regime(s) and this can be a red alert for the shipping industry.

The consequential adverse effect on international shipping business leads to less charter hire for ships and less freight rate, affecting the charter party terms, spot fixtures and other shipping related contracts. The ship sale & purchase rate is also adversely influenced.

The maritime terrorism leads to declaration of 'risky area' by the maritime insurance industry and war risk premium imposed and other insurance premium goes up for the vessels plying in this area for maritime trade affecting the charter hire or freight rate.

The seafarers suffer for the maritime terrorism activities on both short term and long-term basis. They can suffer injury or death due to attack by terrorist on the ships. The innocent seafarers can be kept hostage onboard hijacked/seized ships and interrogated causing mental distress while they have nothing much to do with the trading of the vessel.

2.3 Drug trafficking, Illicit firearms trafficking (gun-running), human smuggling, maritime theft, fraud, damage to ships and port facilities

On 17 June 2019, container ship 'MSC Gayane' was boarded by US federal, state and local law enforcement agents while docked in Philadelphia port Packer Marine Terminal. Authorities found the cocaine, worth more than $1 billion, in seven shipping containers. They officially seized the ship on 9 July 2019. Eight crew members have been charged and remain in custody. The shop owner provided USD 50 million financial security to release the vessel.

Gun-running, human smuggling, maritime theft & fraud are organised crimes and uses maritime transport system as a part of the whole activities. These crimes are threat to global security rather than only to maritime security.

UNODC (United Nation Office on Drugs and Crime) Global Firearms Programme was created to assist states in building adequate criminal justice systems to effectively respond to the challenges posed by organized criminality specifically related to trafficking in firearms its parts and components. *(UNDOC website pages).* The convention related to such crime is The United Nations Convention on Transnational Organized Crime, 2000.

Theft, fraud, damage to ships and port facilities and stowaway cause disruption to maritime transport and is controllable by the preventive measures as per the ISPS Code.

2.4 Cyber security

Maritime cyber security is concerned with the security of information technology (IT) and operational technology (OT) onboard ships and deals with the techniques of protecting computers, networks, programs and data from unauthorized access or attacks that are aimed for compromise the ship operation, cargo operation or port operation.

The motivation for the cyber-attacks can be the followings:

- Cyber misuse by vandalism and disruption of systems, defacement of web sites and unauthorized access to systems.
- Activist groups seeking publicity for creating pressure to secure a specific objective or cause. The target may be the ship itself, operator/charterer or the cargo interests.
- Espionage for unauthorized access to sensitive information and disruption for commercial purposes.
- Organised crime for financial gain in the form of criminal damage, theft of cargo, smuggling of goods and people.
- Terrorism by using the ship to instill fear and cause physical and economic disruption.
- Warfare resulting from conflict between nation states by disabling ships carrying vital cargoes.

In 2013, the hackers obtained access directing spear phishing and malware attacks at Antwerp port authority workers and shipping companies. A Netherlands-based drug ring hired hackers to manipulate systems in the major port to arrange pickups of drugs they had hidden in certain containers of legitimate products. (www.supplychaindive).

2013 Houston – oil rig stability/security compromised-malicious software unintentionally downloaded by offshore oil workers. Malware brought aboard by laptops and USB drives infected on land. *(Maritime Cybersecurity)*

In 2017, in A. P. Moller Maersk, a cyberattack was among the biggest-ever disruptions to hit global shipping. The malware surfaced in Ukraine after being spread by a malicious update to MeDoc, the country's most popular accounting software. Maersk picked up an infection that hooked into its global network and shut down the shipping company, forcing it to halt operations at 76 port terminals around the world. The attack had a $350 million impact, and 40,000 devices had to be updated. (*www.supplychaindive*).

3 Legal aspects of shipping and port security

3.1 Piracy

Under the United Nations Convention on the Law of the Sea (UNCLOS), 1982, States enjoy broad universal jurisdiction over those who commit acts that fall within the definition of piracy. States are also under a general obligation to "cooperate to the fullest possible extent in the repression of piracy on the high seas or in any other place outside the jurisdiction of any State". Relevant provisions in UNCLOS are, however, not in all respects comprehensive. Thus, piracy committed in the territorial waters of any State does not fall within the ambit of UNCLOS, nor do criminal acts which are not covered by the definition of piracy. Moreover, UNCLOS does not provide procedures for the investigation or prosecution of pirates or regulate liability issues arising in the context of modern anti-piracy measures.

Domestic law plays a critical role in the establishment of a legislative framework that allows for effective and efficient prosecutions of pirates. Both UNCLOS and the SUA Convention require the implementation of relevant provisions into the domestic legislation of States Parties. The United Nations Security Council noted in resolution 1918 (2010) that the domestic laws of several States lack provisions criminalizing piracy or are deficient in criminal procedural rules needed to effectively prosecute pirates. Therefore, a number of patrolling navies that have caught pirates have been forced to release them again. It has also been argued by academic commentators that the adoption of

national legislation relating to piracy is fully a manifest precondition for States to fulfil their general obligation to cooperate in the repression of piracy in accordance with article 100 of UNCLOS.

The ability of States to enforce both national and international laws on piracy is essential to repress acts of piracy at sea. Accordingly, it is important for national legislation to include the necessary provisions to authorize the enforcement measures set forth in article 105 of UNCLOS.

One of the fundamental responses to the rise in acts of piracy was the development by industry organizations of specific advice in relation to the situation in waters off the coast of Somalia and, in particular, the development and publication of Best Management Practices to Deter Piracy off the Coast of Somalia and in the Arabian Sea Area (BMP). The BMP include preventive, evasive and defensive measures that shipowners are recommended to implement and follow.

The BMP include three fundamental requirements which urge shipowners to register at the Maritime Security Centre – Horn of Africa (MSCHOA) prior to entering the High Risk Area, to report to the United Kingdom Maritime Trade Operations (UKMTO) office in Dubai, when entering the UKMTO Voluntary Reporting Area and to implement ship protection measures (SPMs). Selected SPMs include additional lookouts and enhanced vigilance during watchkeeping, increased bridge protection including controlled access to the bridge, accommodation and machinery spaces, the construction of physical barriers at vulnerable access points on the vessel, the use of water spray and/or foam monitors, the use of alarms and closed-circuit television (CCTV) and the installation of safe muster points or citadels.

The BMP also refer to the use of unarmed and armed private maritime security contractors, though such use should remain in accordance with the national laws of the flag State, which may differ considerably from one State to another. In addition, the respective national laws on the use of unarmed and armed guards must be followed when sailing in the territorial waters of a State.

In 2011, IMO developed interim guidance on the use of PCASP (Privately Contracted Armed Security Personnel) on board ships in the High-Risk Area.

An agency was formed in December 2008 directly involved in deterring, preventing and repressing acts of piracy and armed robbery off the coast of Somalia is the European Naval Force Somalia – Operation Atalanta (EU-NAVFOR Atalanta).

To deter attacks in the Gulf of Aden and protect shipping in this area, CTF-151 (Multinational Task Force-151) was formed in 2009, in cooperation with the United States navy and IMO established the International Recommended Transit Corridor (IRTC), which stretches from the Bab- el-Mandeb strait separating the Red Sea from the Gulf of Aden, 464 nautical miles, to just north of the Archipelago of Socotra.

In June 2008, Security Council unanimously adopted resolution 1816 (2008), and decided that the States cooperating with the Somalia's transitional Government would be allowed, for a period of six months, to enter the territorial waters of Somalia and use "all necessary means" to repress acts of piracy and armed robbery at sea, in a manner consistent with relevant provisions of international law. In November 2018 the Security Council Adopted Resolution 2442 (2018), Authorizing 12-Month extension for allowing international naval forces to join in the fight against piracy in the waters off the coast of Somalia.

The Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP) was adopted on 11 November 2004. The Agreement entered into force on 4 September 2006 and currently has 19 Contracting States. Under ReCAAP, Contracting States are fully required to prevent and suppress piracy and armed robbery against ships possible. *(UNCTAD Maritime piracy: Part II 2014)*

3.2   Maritime terrorism

Specific international agreements attempt to fill the gap in the suppression of violence at sea left by the narrow definition of piracy in the Convention on the Law of the Sea and its predecessor, the Geneva Convention on the High Seas, the Convention on the

Suppression of Unlawful Acts Against the Safety of Maritime Navigation of 1988 (SUA Convention) and the below mentioned Protocols were developed.

Title	Date of adoption	Date of entry into force	Contracting Parties	Percentage of World Tonnage
Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation (SUA), 1988	10 March 1988	1 March 1992	161	94.51
Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf (SUA PROT), 1988	10 March 1988	1 March 1992	149	88.51
Protocol of 2005 to the Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation (SUA 2005)	14 October 2005	28 July 2010	28	36.05
Protocol of 2005 to the Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf (SUA PROT 2005)	14 October 2005	28 July 2010	24	35.29

The SUA Convention was, in fact, the result of a diplomatic initiative taken by the Governments of Austria, Egypt and Italy in response to the Achille Lauro incident, which had made it clear that the rules of international law existing then were not appropriate for dealing with maritime terrorism.

The SUA Convention covers not only acts of terrorism directed against ships but all imaginable acts of violence at sea but only to a limited extent the Convention deals with the use of ships as weapons.

The 2005 Protocol to the SUA Convention developed in direct response to 11 September 2001 and attempts to define the offenses to be covered by the SUA Convention more broadly.

Although the SUA Convention is broad in respect of its territorial scope of application and has been broadened as far as the offenses covered are concerned by the 2005 Protocol, the sanctions mechanism it provides for is limited.

3.3   ISPS Code
With the background of 11 September 2001 twin tower incident, the December 2002 SOLAS Conference of IMO adopted a number of amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, the most far-reaching of which adopted the International Ship and Port Facility Security Code (ISPS Code), under Chapter XI-2 of SOLAS Convention and it entered into force on 01 July 2004.

The ISPS Code provides the international framework for detecting and deterring the acts which threaten the security of the maritime transport industry, by cooperation between contracting governments, government agencies, local administrations and the shipping and port industries. The security standard of ports varies with the types of port, types of activity/cargo, location, local administration and the attitude of the government towards security of maritime domain of the country.

It appears that in the ISPS Code less importance is given for the security of the port facilities and it is left for other national or international regimes. Limiting matters to ship/port interface indicates a narrow vision of the ISPS Code not considering the full activities of port facility such as cargo/container security and vulnerability of the supply chain. The approach of the ISPS Code has been preventive in nature and it does not address the response to attacks or remediation actions after an attack.

At the design state, the ISPS Code ignored the container security in the maritime sector of the global supply chain system. According to the UNCTAD: Review of Maritime Trade 2019, the world container ports throughput in 2017 was 793 million TEU which accounted for 18 % of the total seaborne trade and the annual growth being 4.7%.

In the containerization of cargo, it is not only the port facilities but remote 'port related areas' like container freight stations, cargo consolidation depots etc. need to be ISPS Code compliant. Storage and transportation of empty containers are security threat in terms of illegal immigration and with false bottom or sides for smuggling drugs and weapons. There are regional initiatives like Container Security Initiative (CSI) but the vulnerability of container security in respect of drug smuggling has recently been demonstrated by the drugs of hundreds of millions USD value seized from containers carried onboard large container ships at the ports of USA and Europe. Similar security concern is there for the dry break bulk cargoes while being packaged or handled, entailing criminal and terrorist activities, originating or destined for locations outside the designated port facilities.

In port facilities with inland water hinterland connectivity, large number of local ISPS Code non-compliant vessels interface for ship to ship operation. The Code does not provide any procedure or guideline in respect of compliance of the mitigating activities against the security threat the inland water vessels my pose while alongside an ISPS code complied vessel.

There is no international regime like PSC for maritime security control measures for the port facilities in the form of an external inspection or audit. The USCG International Port Security (IPS) Program is probably only body to assess ISPS Code compliance in foreign ports in respect of developing best practices in port security among the countries having international trade.

Now a days, cyber security is a great concern for the ships and port facilities but the ISPS Code has not addressed the cyber security directly.

3.4 Maritime cyber security

Due to the multifaceted manifestation of cyber threats and complex nature of ship operation using information technology and operational technology, cyber threat is a matter of great concern at the present. It is also an issue of future concern due to its nature of fast evolution.

It is encouraging to find that the shipping industry has taken the cyber security seriously and stakeholders showing interest in taking initiatives and adopting measures from ship's building through her trading period.

'The Guidelines on Cyber Security Onboard Ships' produced and supported by BIMCO and other stakeholders is comprehensive and useful in implementing cyber risk management while the IMO 'Guidelines on Maritime Cyber Risk Management' will be incorporated with the existing Safety Management System after 01 January 2021 making assertive compliance of the safety and cyber security issues.

4 Conclusion
4.1 Piracy

Maritime piracy has evolved over the ages into an organised crime with change in the level of intricacy and level of violence. Piracy in the East African (Somali Coast) has its own 'business model' of gaining large ransom money and cargo theft with various stakeholders including financers, political leaders' instigators and pirates. With the escalation of pirate activities in the Gulf of Guinea, West Africa water are also emerging as a dangerous spot for piracy. Piracy directly affects ships, ports, terminals and seafarers and it imposes economic constraints to coastal states, landlocked countries, and thus have broader implications on trade across global supply chain, as well as on global supply of energy and food security.

The repression of piracy at sea has not been effective by the international legislation due to lack of developing national legislation against piracy in the light of UNCLOS 1982 and SUA Convention

and the Protocol. Instead, cooperation at various international and regional level, and use of arm guards onboard together with Best Management Practice contributed in reducing piracy incidents.

While the current international and regional initiatives are encouraging, but not enough to repress the challenge of piracy. There should be cooperation and multilateral initiatives in term of information sharing, effective prosecution of pirates and those benefit from the proceeds of the piracy. In this regard, the legal and regulatory framework, particularly at the national level need to be taken into consideration and is recommended.

4.2 Terrorism

Terrorism is a politically motivated maritime security threat and affects the maritime transport industry by its manifestation and subsequent effect. Terrorism at the maritime transit checkpoints can severely disrupt sea lines of communication leading to lack in energy and commodity supply affecting the global economy and downturn in shipping industry. Terrorism can result in global political sanction to suspected regimes adversely affecting the international shipping, port operations and productivity.

The SUA Convention and the Protocols were developed with a view to deter maritime terrorism but the main purpose of the SUA Convention is not the prevention of maritime terrorism but the apprehension, conviction, and punishment of those who commit such offences. In other words, the convention is not preventative but reactive in nature. The SUA Convention remedies some definitional limitations of the UNCLOS, it still has major limitations in terms of powers and obligations given to states. In addition, even if a state has jurisdiction, the prosecution and penalization of offenders is not mandatory under the SUA Convention. Therefore, even though the convention contains a provision for extradition, if the state that receives the offender does not have the political will to prosecute the offender, it certainly does not need to. Also, like the UNCLOS, in SUA the conduct of trials and penalties applied to pirates are determined by domestic law of a state. There is thus no uniformity among states in terms of trial processes and penalties applied to pirates. Many coastal countries Malaysia and Indonesia have not ratified SUA convention. *(Pulungan. 2014)*

Like piracy, international and regional initiatives are required for the legal and regulatory framework to control maritime terrorism, particularly at the national level and is recommended.

4.3 ISPS Code

The ISPS Code is the international framework to detect and deter acts those can lead to terrorism onboard ships and at the port facilities. It provides preventive measures for security of the ships while at ports, the infrastructure and operation of the ports and security of cargo and personnel in the ports. It intends to provide measures for detection and prevention of shipment of drugs, illicit arms, contraband items (CBRN) and WMD form passing through the ports including stowaways.

However, the code lacks in overall vision of the security of the international supply chain and it provides preventive measures but not addresses the remedial issues. The Code needs to be overhauled to have enforceability and a regime for collecting, analyzing and distributing security performance of the ports. The Code should address cargo and container security the land segment of the maritime transport in the supply chain taking into consideration of the port related areas.

4.4 Cyber security

Cyber security for the ships and port facilities has been taken up seriously by the international shipping industry and still at a developing stage. The challenge posed by the cyber threats that they have multifaceted manifestation and nature of fast evolution, and due to the complex nature of ship operation using information technology and operational technology. The initiatives taken by the industry and by the IMO in terms of 'Guidelines' is quite comprehensive and should be effective deterrent to the maritime cyber threats.

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Illegal migration and human security: Challenges and way forward

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Abstract
Trafficking in human beings and migrant smuggling constitute serious crime and grave violations of human rights, affecting regardless men, women and children. This study will help us better understand the relevant connections between migration and vulnerability to trafficking, forced labour, child labour, and modern slavery. In last five years, maritime migration in Asia has become increasingly touchy, as refugees and irregular migrants navigating the region by the Bay of Bengal which enter an epoch of crisis as a wave of migrants and refugees attempted to cross sea to reach Southeast Asia. Many Bangladeshi workers risk their lives on overcrowded fishing boats traveling across the Bay of Bengal. Now people are being abducted or tricked and then taken to larger ships anchored in international waters just outside Bangladesh's maritime boundary. This in-depth study will focus on the areas where our prevention efforts should be the center of attention on protections for victims and vulnerable migrants.

Pollution and Environmental hazards vis-à-vis maritime crime and security in the context of climate change fantasy in the Bay of Bengal

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Key words
Environmental hazards; pollution; ocean health; climate change; Bay of Bengal.

Abstract

Mechanism of maritime security cannot evolve if climate change issue is taken into consideration. Holistic maritime security largely depends on the prevention of pollution and management of both environmental and anthropogenic hazards. The purpose of this study is to focus reality of global pollution and hazards which is threatening greatly maritime security rather than bringing climate change fallacy that would jeopardy the whole objectives. Managing pollution and hazards are the demand of the time that would never be achieved in the context of climate change fantasy. Paper embodies analogies on maritime crime and security associated with pollution and both environmental and anthropogenic hazards and not with the climate change. Pollution and hazards are the major forcing agents against the holistic security in the maritime sector. Natural including geological events can cause severe environmental hazards largely due to cyclone, storm surge, flood, saline water encroachment, volcanic activities, mud diapirism, mud volcanism, slope failure, submarine landslide, turbidites, shallow gas, active fluid seepage, seafloor pockmark formation, seismicity and seismicity induced trans-oceanic tsunami, and local tsunami. Anthropogenic processes and activities of continuous emergence of urbanization and increased population along the coastal belt of the maritime nations with very little and no proper management pose serious threats to the blue economy, ocean health and biodiversity.

Climate change is an idea circulating anxiously in the domains of domestic politics and international diplomacy. It is an idea circulating to mobilize forces in the sectors of business, law and international trade. Without proper differentiation of relations of climate change, weather, environment and pollution, the holistic security of maritime sector and the sustainable development of model of climate change and environment will not be achieved. Security in friendly environment and pollution free earth are the key to every national security, comprising the dynamics and interconnections among the natural resource base, the social fabric of the state, and the economic engine for local and regional stability. Further, global climate change only oscillates between glacial and inter-glacial period of thousand to millions of years having marked variations within each period. In fact, there is no real impact of climate change on maritime security. Mixing of climate and climate change with pollution and environmental hazards in the perspective of security and sustainability is an unscientific way forward and a flawed approach.

Introduction

"We 've arranged a civilization in which most crucial elements profoundly depend on science and technology. We have also arranged things so that almost no one understands science and technology. This is a prescription for disaster. We might get away with it for a while, but sooner or later this combustible mixture of ignorance and power is going to blow up in our faces" (Sagan, 1995: 25-26; quoted in Mooney and Kirshenbaum, 2009). Climate and climate change can principally occur due to the solar, geological and natural events and cannot be predicted in the human and anthropogenic time frame. It is the weather pattern that fluctuates in decadal to millennium time frame. The minuscule Earth, immersed in the solar sphere of influence, cannot simply escape its impact. Maritime security needs to examine threats posed by the environmental and pollution events and its trend to individuals, communities and nations. "Climate change" is not a problem waiting for

solution, it is the "environment" which is being polluted severely to cause disaster. The climate system, as defined in the third IPCC Working Group I Assessment Report (Stocker et al., 2013) is an interactive system consisting of five major components: the atmosphere, the hydrosphere, the cryosphere, the land surface and the biosphere, forced or influenced by various external forcing agents, the most important of which is the Sun. At present the Earth is passing through the interglacial period that continues for the last approximately 12,000 years (Fig. 1A). Global climate change is a change in the statistical distribution of weather pattern over the periods of time that range from thousands to hundred thousand of years. Climatic change has occurred in several geologic time periods by the natural process and it is not anthropogenic.
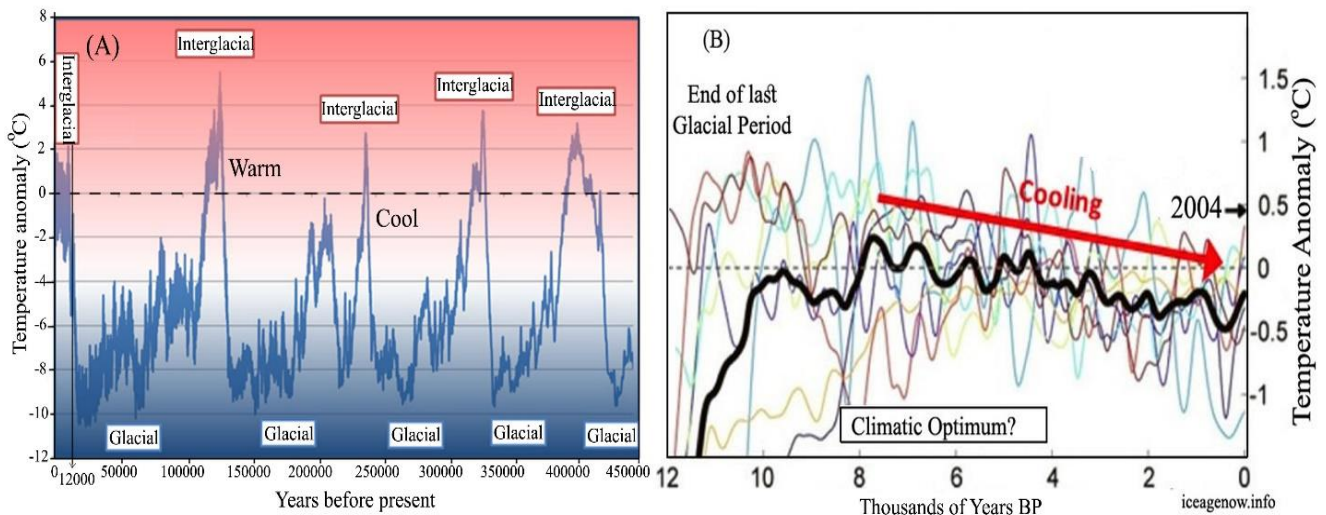
Figure 1: (A) Glacial – Interglacial cycle of climate change. (B) Global cooling trend for 8000 years BP.

The Köppen climate classification divides climate into five main climate groups viz., tropical, dry, temperate, continental, and polar with each group is divided based on seasonal precipitation and temperature patterns (Köppen, 1884). Global climatic change due to the factors such as biotic processes, variations in solar radiation received by Earth, plate tectonics, and volcanic eruptions for long time will occur. Atmospheric processes affected by ocean acidification, toxic metal poisoning, acid rain, and ozone damage and consequent increased UV-B radiation, volcanic darkness, cooling and photosynthetic shutdown, each of which are the crucial in driving global extinctions (Bond and Grasby, 2017). Present global warming trend has in fact a downward trend indicating for another 'Little Ice Age' in future (Fig. 1B). However, global warming is an event and climate change is a phenomenon. We do not judge climate against any fixed or universal morality. Neither can climate be measured directly by our instruments nor can it be defined literally. We can measure the temperature of a specific place at a given time, but no-one can directly measure the climate of Paris or the temperature of the planet. According to Hulme (2009), climate is an idea that carries a much richer tradition of meaning than is captured by the unimaginative convention that defines climate as being the average course or condition of the weather at a place usually over a period of years as exhibited by temperature, wind velocity and precipitation.

The most general definition of climate change is a change in the statistical properties (principally its mean and spread) of the climate system (Hulme, 2016) when considered over long periods of time, regardless of cause (Petit et al., 1999). Accordingly, fluctuation over the period such as El Niño, do not represent climate change. Global warming cannot be attributed to global climate change especially in the context of environmental policy. Global warming cannot change climatic condition alone. Within scientific journals, global warming refers to surface temperature increase

while climate change includes when polar climate changes to tropical climatic condition, or desert climate changes to tropical one. Factors that can shape climate are called climate forcing or "forcing mechanisms" (Broecker, 1975). These include processes such as variations in solar radiation, variations in the Earth's orbit, variations in the albedo or reflectivity of the continents, atmosphere, and oceans, mountain-building and continental drift and changes in greenhouse gas concentrations. Industrial emissions of tiny airborne particles called aerosols might cause cooling, while greenhouse gas emissions would cause warming. Which effect would dominate?

Pollution in the sea can occur due to the natural processes like volcanic eruption, earthquake induced submarine landslides, tsunami and so-called sea level rise. Pollution can change an environment but cannot change climate. Important offshore hazards include mud diapirism, mud volcanism, slope instability, submarine landslide, turbulence and turbidites, shallow gas, active fluid seepage, seafloor pockmark formation those may have adverse impact on coastal ecological system. Security of the ocean largely depends on the maintaining environmentally friendly health which is a major challenge. The actual data are easy for anyone to find – they are posted and regularly updated, freely, on public websites around the world. The most consistent, highly respected, and regularly analyzed and updated data on global surface temperatures are available from NASA's Goddard Institute for Space Sciences, NOAA's National Climate Data Center, and the United Kingdom's Met Office Hadley Center. The present paper aims at to project global warming and global climate change as the paradoxical issue and not related to environmental safety and security of the maritime sector.

Global Warming

Global warming is the slow increase in the average temperature of the earth's atmosphere because an increased amount of the energy (heat) striking the earth from the sun is being trapped in the atmosphere and not radiated out into space. Global warming is the phenomenon of increasing average air temperature of certain time period in comparison to the previous average temperature of the same time period. According to IPCC (2013) the interval between 1880 and 2013 saw an increase in global average surface temperature of approximately 0.8°C. It predicted that by the end of the 21st century the global mean surface temperature would increase by 0.3 to 5.4 °C. According to Nobel Laureate of Physics Ivar Giaever, it is not possible to measure global average temperature rise of 0.8°C. This temperature rises of 0.8°C if measured has occurred between 1880 and 2013 in 133 years which is only 0.3% signifying the Earth that maintained a very stable temperature. On the other hand, as claimed CO_2 in the atmosphere has increased from 280 ppm to 380 ppm justifying average global temperature rise is due to increased CO_2 emission. Is there a cause and effect? However, this positive correlation is bearing a negative correlation means whatever temperature rise, it is not due to increased CO2 emission.   Over the last 100 years, the average temperature of the air near the Earth's surface has risen a little less than 1° Celsius (0.74 ± 0.18°C). This rise in temperature may be responsible for the conspicuous increase in storms, floods and raging forest fires. Reference from a special report by the IPCC, which states that "global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate." The report concludes that risks of long-lasting or irreversible impact on the earth's ecosystems are higher if warming breaches the 1.5-degree mark by 2030.
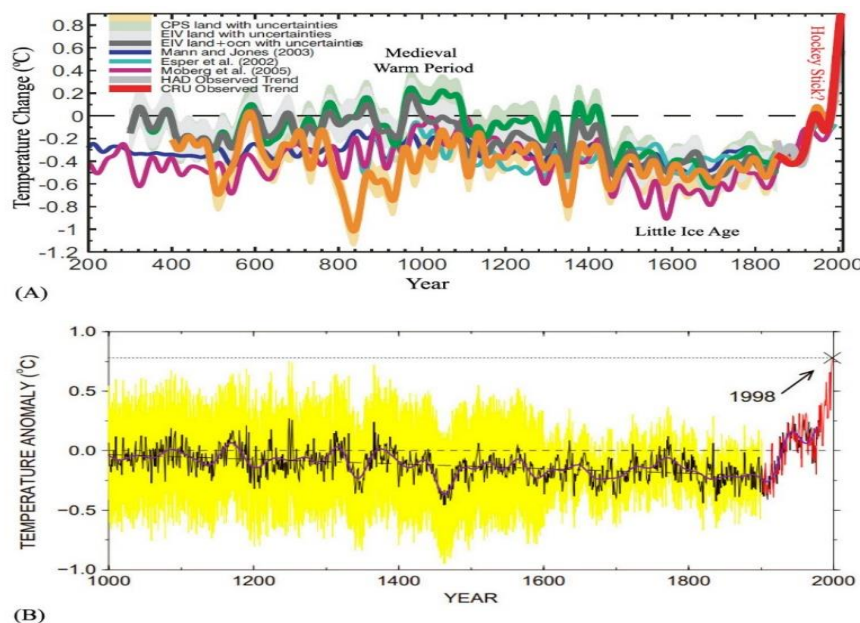
Figure 2: (A) Actual Medieval Warm Period (MWP) and Little Ice Age (LIA). (B) Both MWP & LIA are deleted to show typical "hockey Stick" curve of temperature rise.

A rapid temperature rise over the last 30 years is anomalous for the climate scientists. Moreover, normally the Earth should now be in a cool-down period, according to natural effects like solar cycles and volcano activity, not in a heating up phase. Present world is passing through the interglacial period that represent for approximately 12,000 years. The Last Glacial Maximum (LGM) ended around 22,000 BP. Records of the last 450,000 years clearly show that 'global climate change' occurred is limited within the cycle of glacial and inter-glacial phases and these changes occurred almost in symmetrical interval with exception of 175,000 to 200,000 years BP (Fig. 1A). The climatic group of Köppen (1884) is continuing since at least Last Glacial Maxima (LGM) having concurrent timing of 22.1±4.3 ka and 8±3.2 ka in the Northern Hemisphere and 22.3±3.6 ka and 7.4±3.7 ka in the Southern Hemispheres that matches with Earth's wobble happens over two cycles of 19000 and 23000 years. Further, temperature has been relatively stable over the last two thousand years before 1850, with regionally varying fluctuations such as the 'Medieval Warm Period' and the 'Little Ice Age' (Figure 2A). There are two aspects of the curves in the figure 2A, first, the fake 'hockey stick' graph of abrupt rise in temperature after 1960 that erased accepted global temperature history; and second, the removal of global temperature record representing 'Medieval Warm Period' and 'Little Ice Age' in the last about 2000 years of the present inter-glacial period (Fig. 2B).
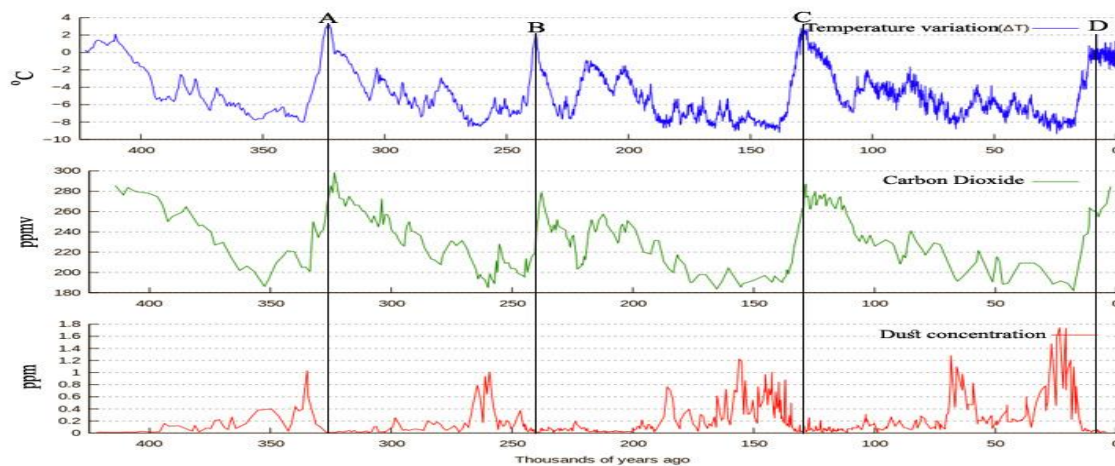
Figure 3: for the last 400,000 years peak CO_2 concentration in the atmosphere attains much later of the peak of temperature rise.

The most authentic climate events of the last deglaciation are well defined in ice core records from polar region of both the hemispheres. This indicates relatively concurrent timing of the Last Glacial Maximum (LGM; peak glacial conditions) and the Altithermal (peak interglacial conditions) in the Northern hemisphere at 22.1±4.3 ka and 8.0±3.2 ka respectively and in the Southern hemisphere at 22.3±3.6 ka and 7.4±3.7 ka respectively (Shakun and Carlson, 2010). The magnitude of the glacial–interglacial temperature change increases with latitude, reflecting the polar amplification of climate change. The short-term zig zag of temperatures over the past 100 years have been either cold or hot not just one way. For example, in the 1930s temperature was high to cause world record draughts and then in the 1960s temperatures became record cold. The predicted rise in temperature was based on a range of possible scenarios that accounted for future greenhouse gas emissions since greenhouse gases are considered as heat trapper for global warming. But, studies of Antarctic ice core by Petit et al (1999) and Kawamura et al (2007) reveals that for the last 400,000 years peak CO_2 concentration in the atmosphere attains much later of the peak of temperature rise signifying no CO_2 contribution for temperature rise. On the other hand, dust concentration in the atmosphere attained much earlier than the peak of temperature rises signifying causes of volcanic activities for enhanced CO_2 concentration in the atmosphere (Fig. 3). However, sources of greenhouse gas emission in the atmosphere are widespread (Fig. 4). The major greenhouse gases are water vapor, which causes about 36–70 percent of the greenhouse effect; carbon dioxide (CO_2), which causes 9–26 percent; methane (CH_4), which causes 4–9 percent; and ozone (O_3), which causes 3–7 percent. Anthropogenic Greenhouse Gas (CO_2) emissions vis-à-vis global warming, the two attributes are blamed for future climate change. The future projection of global warming by IPCC opined that continued anthropogenic greenhouse gas emissions at or above current rates would cause further warming by 1.8°C (low scenario) to 4.0°C (high scenario) and shall induce many changes in the global climate system during the 21st century. But increased CO_2 concentration in the atmosphere is not accountable for the global warming.

Figure 4: Sources of "greenhouse gas".
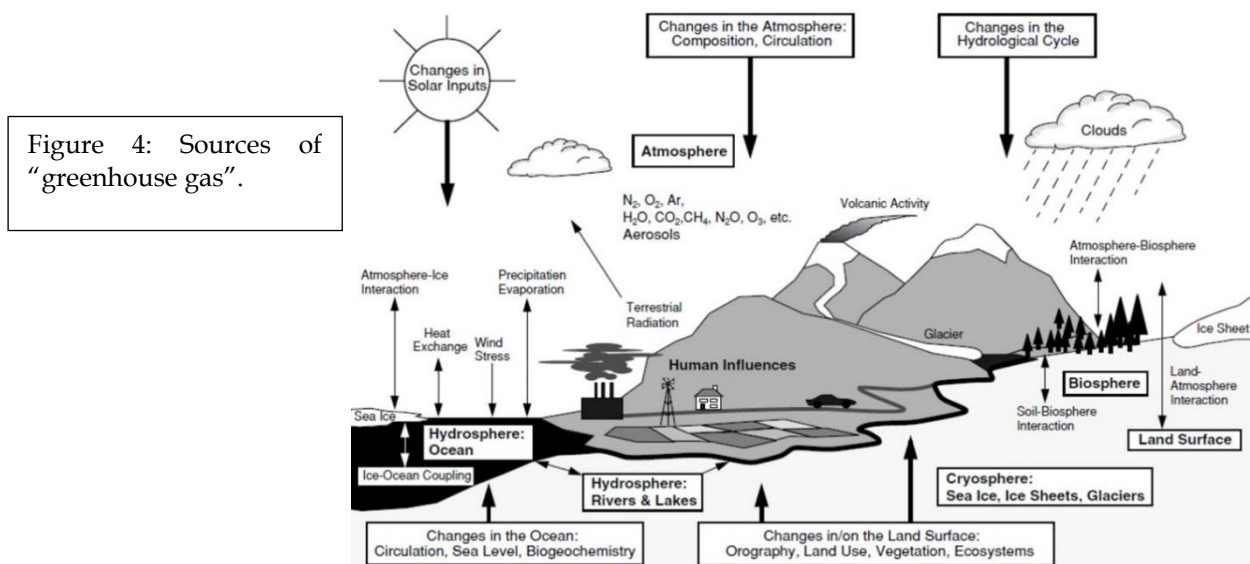
Global temperature variation occurs ahead of CO_2 concentration signifying some other causes for global warming and not the CO_2 emission. Over the last 12000 years the Earth has witnessed frequent oscillation between cold and warm phases after the beginning of the interglacial period (Holocene Climate Optimum) (Fig. 5). Average near surface temperatures of the northern hemisphere during the last 11000 years (Dansgaard et al., 1969) exhibit several warm and cold phases including the present warm phase (Fig. 6A). However, despite the dominance of warm phase, expanded record of temperatures since the end of the last glacial period reveals that global

temperatures have been falling for the past 8000 years and we are probably heading towards another little ice age (Fig. 6B) (iceagenow.info).
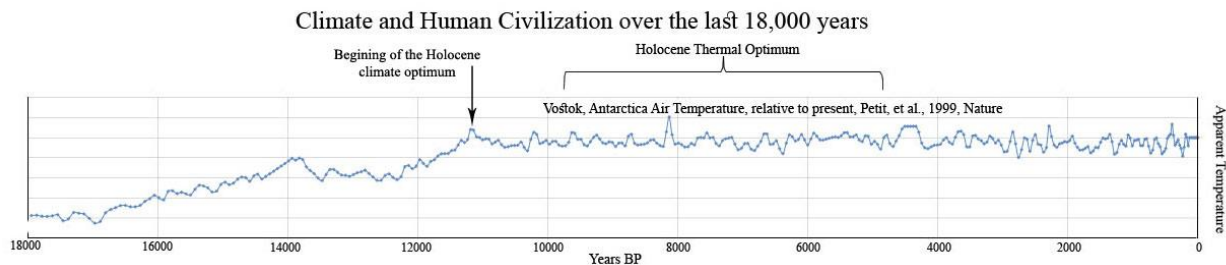
Figure 5: Since beginning of the Holocene climate optimum rise and fall of temperature is very frequent.
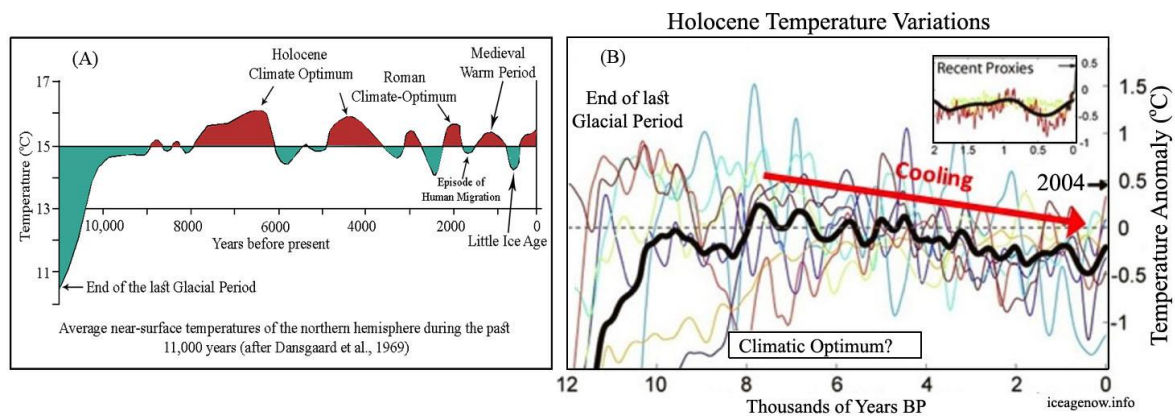
Figure 6: (A) Warm phase coincides with civilization. (B) Possible next Little Ice Age.
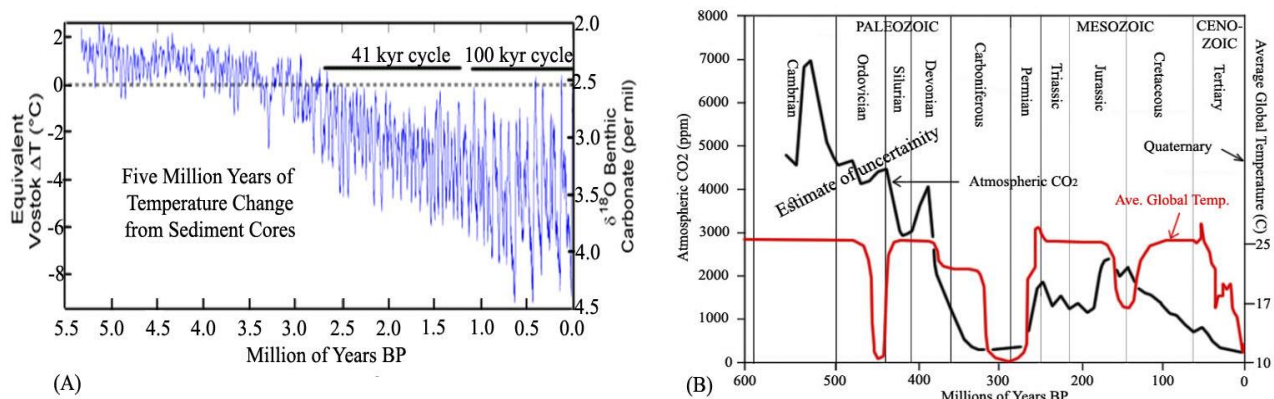
Figure 7: (A) Oxygen isotope fractionation of benthic δ18O records in deep sea sediment and temperature derived from Vostok ice cores has a decreasing trend. (B) global temperature and CO_2 have no correlation.

Reconstruction of the past 5 million years climate history based on oxygen isotope fractionation of benthic δ18O records in deep sea sediment cores fitted to a model of orbital forcing (Lisiecki and Raymo, 2005) from 57 globally distributed sites reveals that the temperature derived from Vostok ice cores following Petit et al. (1999) has a decreasing trend since 3 million years BP both

for 41 thousand years cycle and 100 thousand years cycle. Variations in temperature anomaly, however, is relatively larger in 100 thousand years cycle than in 41 thousand years cycle (Fig. 7A). This finding may indicate that global climate change interval between glacial and interglacial period is approximately 100 thousand years. Data on global temperature and atmospheric CO_2 over geologic time (550 Ma) show a similar overall pattern: very high CO_2 values during the early Paleozoic, a large drop during the Devonian and Carboniferous, high values during the early Mesozoic, and a gradual decrease from about 170 Ma to low values during the Cenozoic (Berner and Kothavala, 2001). This reveals that global temperature and CO_2 concentration in the atmosphere are the independent variables and the anthropogenic greenhouse gas has no relation to the global temperature variations (Fig. 7B). According to Alley (2000) temperature of last 10000 years from Greenland GISP2 ice core global temperature was more than 2°C above present-day temperature for all time during Minoan, Roman and Medieval periods when there was no anthropogenic greenhouse gas emission in the atmosphere (Fig. 8).

Figure 8: Greenland GISP2 Ice Core Temperature last 10000 years was more than 2°C above present day temperature.
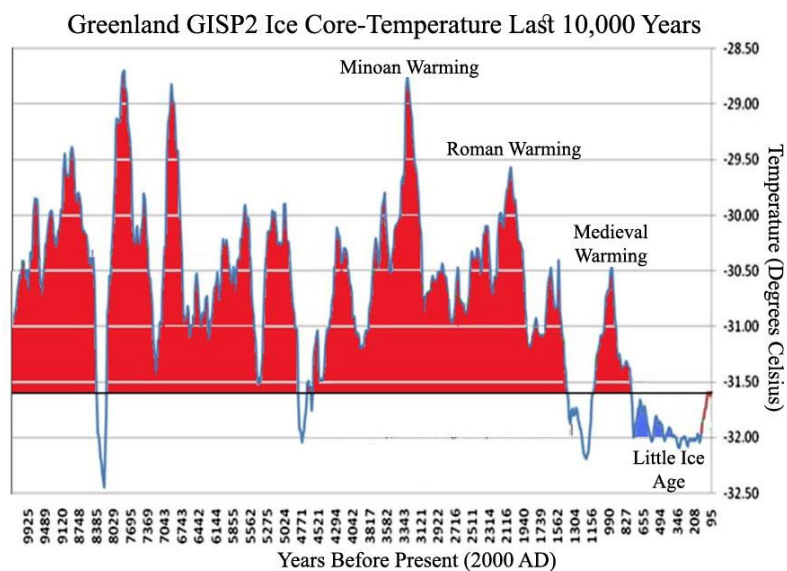
From scores of publications it is further evident that global warming can occur due to solar activities. However, contribution of greenhouse gases in the global warming may be attributed to water vapor that plays the most dominant role as catalyst amongst all the greenhouse gases (Fig. 9). Further, an increase of global temperature can warm ocean surface-water producing water vapor forming cloud in the atmosphere and can entrap radiated heat. Gray (2008) opines that the two main scientific claims of the IPCC, (a) "the globe is warming" and (b) "increases in carbon dioxide emissions are responsible".
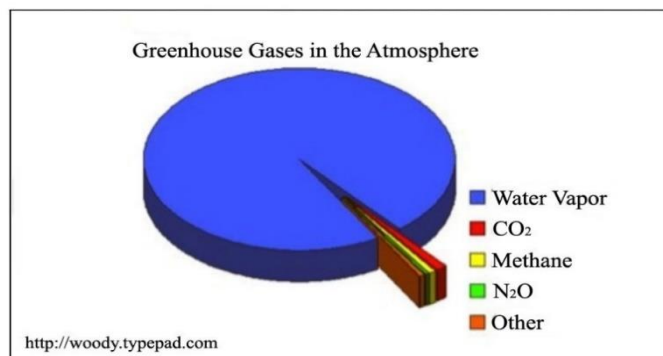
Figure 9: Water vapor is the most dominant of all the greenhouse gases.

Evidences for both claims are fatally flawed. Solar experts believe that the Earth could be heading towards a 'grand solar minimum', a reduction in solar output like Little Ice Age once saw ice fairs on the Thames (Fig. 10A & 10C). Solar activity has repeatedly fluctuated between

high and low during the past 10,000 years. In recent years, the Earth has unfortunately left a period of very high solar activity, the Modern Grand Maximum.

Figure 10: (A) Solar activities and temperature variation. (B) Volcanic activities and temperature rise. (C) The frozen Thames in 1677.
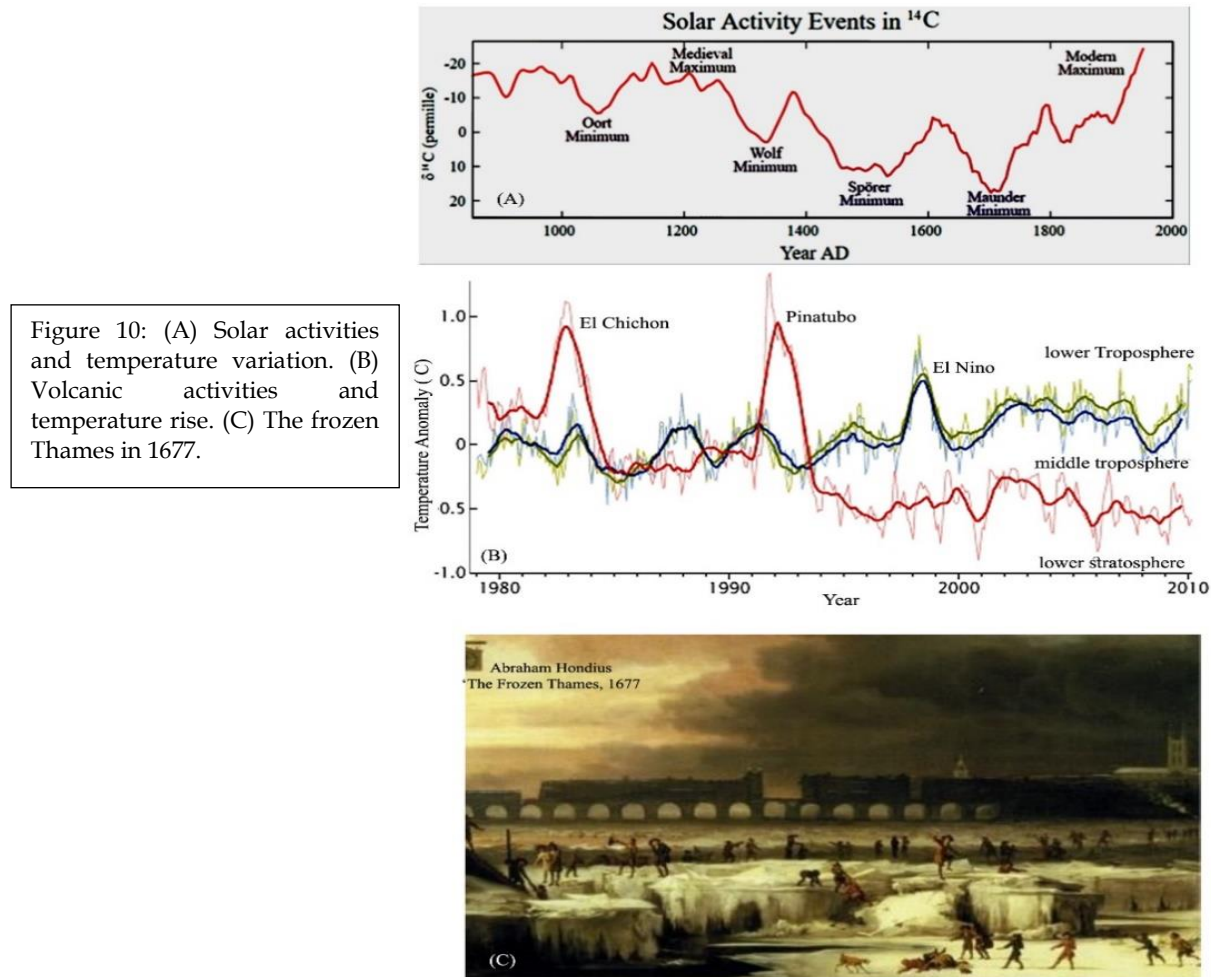
Periods of high solar activity correspond to multi-decadal- to centennial-scale warming. The cause of the Little Ice Age is not known but climatologists contend that reduced solar output, changes in 'atmospheric circulation, and explosive volcanism might have played roles. When Mount Pinatubo erupted in the Philippines June 15, 1991, an estimated 20 million tons of sulfur dioxide and ash particles blasted more than 20 km high into the atmosphere (Fig. 10B). The eruption caused widespread destruction and loss of human life. Gases and solids injected into the stratosphere circled the globe for three weeks. Volcanic eruptions of this magnitude can impact global climate, reducing the amount of solar radiation reaching the Earth's surface, lowering temperatures in the troposphere, and changing atmospheric circulation patterns. Large-scale volcanic activity may last only a few days, but the massive outpouring of gases and ash can influence weather pattern for years. Sulfuric gases convert to sulfate aerosols, sub-micron droplets containing about 75 percent sulfuric acid. Following eruptions, these aerosol particles can linger if three to four years in the stratosphere (Kirchner et al., 1999; Stenchikov et al., 1998). A long-term average, volcanism produces about 5×10^{11} kg of CO_2 per year; that production, along with oceanic and terrestrial biomass cycling maintained a carbon dioxide reservoir in the atmosphere of about 2.2×10^{15} kg. Current fossil fuel and land use

practices now introduce about a (net) 17.6×10^{12} kg of CO_2 into the atmosphere and has resulted in a progressively increasing atmospheric reservoir of 2.69×10^{15} kg of CO_2.

Sea Level Rise

"Sea level rise" is the most legitimate concern of global warming. If global warming occurs, polar ice could melt, and thermal expansion of ocean water would have its volumetric expansion to sea level rise. But no evidence exists that can proof that sea level is continuously rising and by 2100 AD it will exceed 1.5 m or 2 m mark. According to (Khan, 2019) equatorial bulge, polar flattening, elevation difference of the spheroidal surface between equator and pole with lower in the pole, strong gravity attraction in the polar region and week gravity attraction in the equatorial region, all these phenomena play dominant role that prevents from sea level rise. Further global sea level rise and fall would occur due to crustal subsidence and uplift respectively only. When Earth warms, two things can happen viz., ice melting and thermal expansion of the sea surface. Ice melting does not contribute to sea level rise due to very simple scientific reasons, neither do thermal expansion of the ocean water because ocean water gets evaporated as the surface of the ocean gets heated. Evaporation ultimately can form cloud in the atmosphere where it acts as the heat-trapper. Sea surface height (SSH) may rise due to volumetric expansion of the entire water column otherwise there would form ocean circulation due to density difference. Height of the ocean surface at any given location, or sea level, is measured either with respect to the surface of the solid Earth i.e., relative sea level (RSL)) or a eustatic sea level (ESL) in reference to the centre of the Earth (Fig. 11A). Relative sea level (RSL) change can differ significantly from global mean sea level (GMSL) because of spatial variability in changes of the sea surface and ocean floor height. RSL change over the ocean surface area gives the change in ocean water volume, which is directly related to the sea level change.
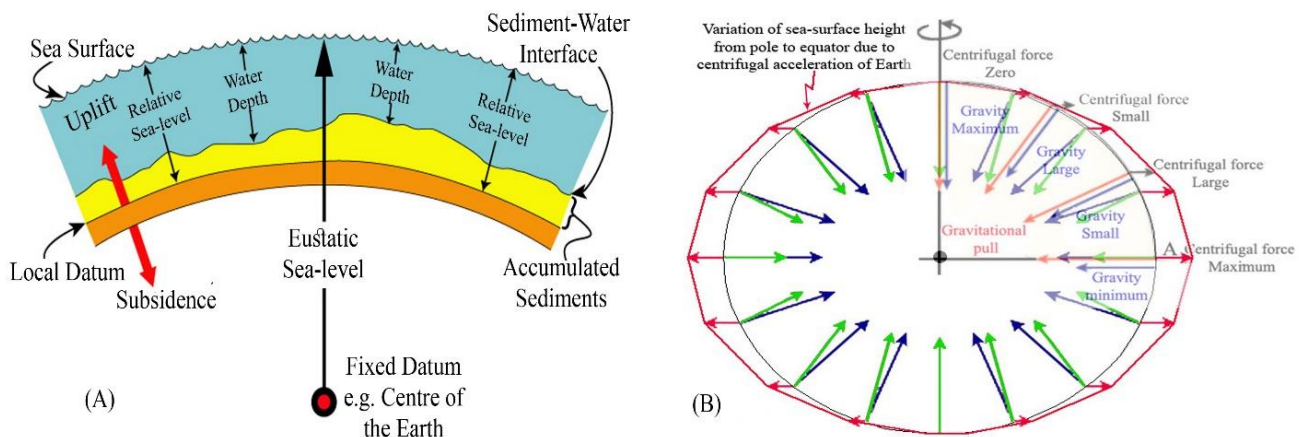
Figure 11: (A) Eustatic and Relative sea level. (B) Equatorial bulge and polar flattened with elevation difference of 21 km along with gravity attraction and centrifugal force can prevent any visible sea level rise.

Sea level changes can be driven either by variations in the masses or volume of the oceans, or by changes of the land with respect to the sea surface. In the first case, a sea level change is defined 'eustatic'; otherwise, it is defined 'relative' (Rovere et al., 2016). Variations in the masses or volume both can affect largely the gravity field of the Earth and in turn can affect geoid surface. If geoid surface varies, then the measurement of "sea surface height anomaly" (ΔSSH) would be wrong. Hence, it is certain that a prediction and measurements of global sea level rise to the extent of millimeter scale with respect to global mean sea level is not possible. According to Kemp et al (2015) land uplift or subsidence can result in, respectively, a fall or rise in sea level that cannot be considered eustatic as the volume or mass of water does not change. Any sea level change that is observed with respect to a land-based reference frame is defined a relative sea level (RSL) change.

Eustatic Sea Level (ESL) changes also occur when the volume of the ocean basins changes due to tectonic seafloor spreading or sedimentation in the ocean basin or closure of the ocean basin. These processes can occur only geologically for millions of years. Changes in sea level can be observed at very different time scales and with different techniques. Regardless of the technique used, no observation allows to record purely eustatic sea level changes. At multi-decadal time scales, sea level reconstructions are based on satellite altimetry/gravimetry and landbased tide gauges (Cabanes et al., 2001). At longer time scales (few hundreds, thousands to millions of years), the measurement of sea level changes relies on a wide range of sea level indicators (Rovere et al., 2016a; Shennan and Horton, 2002; Vacchi et al., 2016). One of the most common methods to observe sea level changes at multi-decadal time scales is the tide gauges. Modern tide gauges are associated with a GPS station that records land movements. However, tide gauges have three main disadvantages: (i) they are unevenly distributed around the world (Julia Pfeffer and Allemand, 2015); (ii) the sea level signal they record is often characterized by missing data (Hay et al., 2015); and (iii) accounting for ocean dynamic changes and land movements might prove difficult in the absence of independent datasets (Rovere et al., 2016). Since 1992, tide gauge data are complemented by satellite altimetry datasets (Cazenave et al., 2002). The altitude of the satellite is established with respect to an ellipsoid, which is an arbitrary and fixed surface that approximates the shape of the Earth. The difference between the altitude of the satellite and the range is defined as the sea surface height (SSH). Subtracting from the measured SSH a reference mean sea surface (e.g. the geoid), one can obtain a 'SSH anomaly'. Here, the measure of 'SSH anomaly' is a controversial one because geoid differs from MSL (mean sea level) by several meters. The shape of the geoid is crucial for deriving accurate measurements of seasonal sea level variations (Chambers 2006). According to Rovere et al (2016) measurements of paleo eustatic sea level (ESL) changes bear considerable uncertainty. Further, sea level changes on Earth that cannot be treated as a rigid container although eustasy is defined in view of Earth as a rigid container.

Internal and external processes of the earth such as tectonics, dynamic topography, sediment compaction and melting ice all trigger variations of the container and these ultimately affect any sea level observation. Further, sea level is largely dependent on the centrifugal force and Earth's gravity (Fig. 11B) that shape the Earth as spheroidal with equatorial bulge and polar flattening. Difference in height between equatorial bulge axis and polar flattening axis is about 21km. Polar melt water will not move up the hill from pole to equator, neither it will move due to high gravity at pole and low gravity at equator. An estimated, observed, and possible future amounts of global sea level rise from 1800 to 2100, relative to the year 2000 has been proposed by Melillo et al (2014) based on the works of Kemp et al (2011); Church and White (2011); Parris et al (2012)(Fig. 12).

Figure 12: Estimated, observed, and predicted global sea level rise from 1800 to 2100. Estimates from proxy data are shown in red between 1800 and 1890, pink band shows uncertainty. Tide gauge data is shown in blue for 1880-2009. Satellite observations are shown in green from 1993 to 2012. The future scenarios range from 0.66 feet to 6.6 feet in 2100 (Redrawn from Melillo et al., 2014).
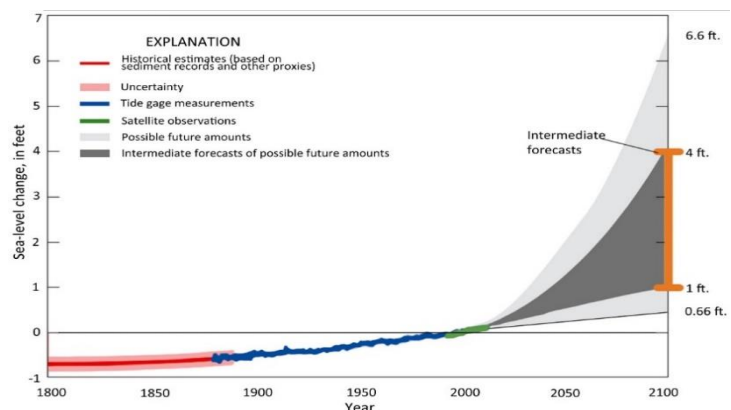
The main concern of such prediction of future global sea level rise shown in Melillo et al (2014) is the forecast beyond 2012 upto 2100. Although sea level rise is shown by 0.89 ft in 209 years

(between 1800 and 2009) at the rate of 0.0043 ft/yr, the prediction of 4 to 6 ft at the rate of 0.044 ft/yr and 0.066 ft/yr respectively in 91 years between 2009-2100) is highly questionable. An abrupt jump in the sea level rise after 2009 is a conjecture.

Climate Change

Climate threat investigators revealed that atmosphere–ocean modeling is an imperfect representation, paleo-data consist of proxy climate information with ambiguities, and modern observations are limited in scope and accuracy (Khan, 2019). An understanding of climate requires an amalgamation of astronomy, solar physics, geology, geochronology, geochemistry, sedimentology, tectonics, palaeontology, palaeoecology, glaciology, climatology, meteorology, oceanography, ecology, archeology and history. Earth's climate system is unfathomably complex. It is affected by innumerable interacting variables, atmospheric CO_2 levels being just one. The more variables there are in any system or train of events, the lower the probability of all of them coming to pass. The list of variables that shape climate includes cloud formation, topography, altitude, proximity to the equator, plate tectonics, sunspot cycles, volcanic activity, expansion or contraction of sea ice, conversion of land to agriculture, deforestation, reforestation, direction of winds, soil quality, El Niño and La Niña ocean cycles, prevalence of aerosols (airborne soot, dust, and salt) — and, of course, atmospheric greenhouse gases, both natural and manmade. However, about Seven million people in Bangladesh displaced in the last one decade due to flood, river-bank erosion, storm surge, cyclone and other natural calamities are not the climate migrants nor the victims of climate change. Present variations in the seasonal precipitation, temperature and associated weather extremes being the fundamental elements of climate system, shall not lead to climate change as predicted. Climate change is attributed to the changes from glacial to interglacial and vise-versa. Climate and climate change can principally occur due to the solar, geological and natural events and cannot be predicted in human and anthropogenic time frame. Studies of the Earth's atmosphere alone tell us nothing about future climate and climate change. Climate has a profound influence on life on Earth. It is part of the daily experience of human beings and are essential for health, food production and well-being. Many consider the prospect of human-induced climate change as a matter of concern. "Climate" refers to the average weather in terms of the mean and its variability over a certain timespan and a certain area.

Classical climatology provides a classification and description of the various climate regimes found on Earth. Statistically significant variations of the mean state of the climate or of its variability, typically persisting for thousand years and longer, are referred to as "climate change". Climate scientists have gathered detailed observations on various weather phenomena such as temperatures, precipitation, storms etc; and related influences on ocean currents and the atmosphere's chemical composition since the mid-20th century. These data indicate that the influence of human activities since at least the beginning of the Industrial Revolution has been over emphasized into the very fabric of climate change. Climate is determined by the atmospheric circulation and by its interactions with the large-scale ocean currents. Climate of the Earth depends on factors that influence the radiative balance, such as, the atmospheric composition, solar radiation and volcanic eruptions. The climate system consists of various components, including the dynamics and composition of the atmosphere, the ocean, the ice and snow cover, the land surface and its features. Large variety of physical, chemical and biological processes are taking place in and among these components wherein, cosmological and solar activities / processes play dominant role in the global climate change phenomenon (Fig.4).

Natural Forcing of the Climate System

The ultimate source of energy that drives the climate system is radiation from the Sun. The atmosphere contains several trace gases which absorb and emit infrared radiation. These so-called greenhouse gases absorb infrared radiation, emitted by the Earth's surface, the atmosphere and clouds. In an equilibrium climate state, the average net radiation at the top of the atmosphere is zero.

A change in either the solar radiation or the infrared radiation changes the net radiation. Climate variations, both in the mean state and in the occurrence of extreme events, may result from radiative forcing, but also from internal interactions between components of the climate system. A distinction can therefore be made between externally and internally induced natural climate variability and change. The response of the climate to the internal variability of the climate system and to external forcing is further complicated by feedbacks and non-linear responses of the components. An important example of a positive feedback is the water vapor feedback in which the amount of water vapor in the atmosphere increases as the Earth warms. This increase in turn may amplify the warming because water vapor is a strong greenhouse gas. An example of a physical feedback is the complicated interaction between clouds and the radiative balance. An important example of a biogeochemical feedback is the interaction between the atmospheric CO_2 concentration and the carbon uptake by the land surface and the oceans. Understanding this feedback is essential for an understanding of the carbon cycle (Fig. 13).
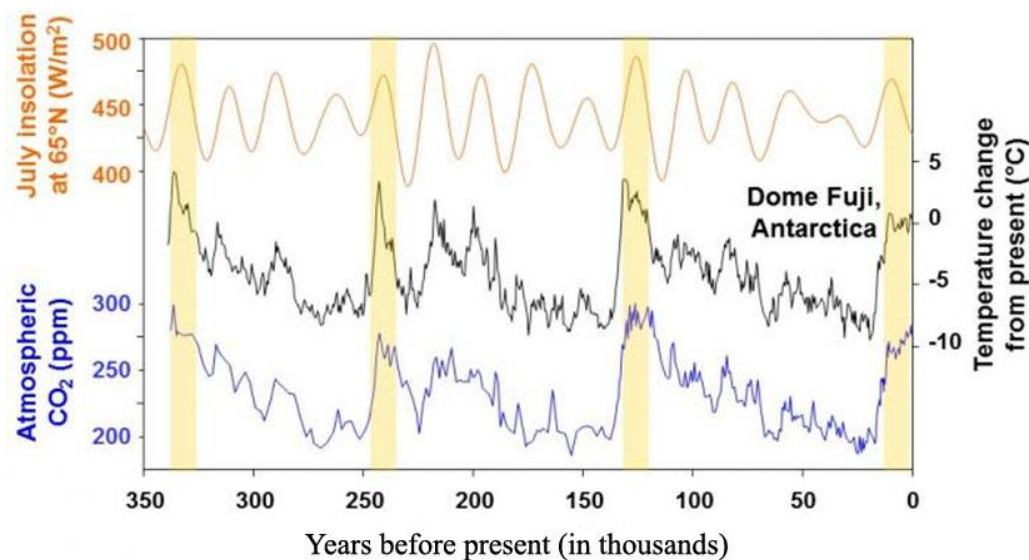
Figure 13: Based on Antarctic ice cores four full glacial cycles during the last 350,000 years is found.

Global and hemispheric variability of climate system

Climate may vary naturally on all timescales. During the last million years or so, glacial and interglacial periods have alternated as a result of variations in the Earth's orbital parameters. Based on Antarctic ice cores, more detailed information is available now about the four full glacial cycles during the last 350,000 years (Fig. 13).

In recent years it was discovered that during the last glacial period large and very rapid temperature variations took place over large parts of the globe, in the higher latitudes of the Northern Hemisphere. These abrupt events saw temperature changes of many degrees within a human lifetime. In contrast, the last 10,000 years appear to have been relatively more stable, though locally quite large changes have occurred. Solar activity has repeatedly fluctuated between high and low during the past 10,000 years. In recent years, the Earth has unfortunately left a period of very high solar activity, the Modern Grand Maximum. Periods of high solar activity correspond to multi-decadal- to centennial-scale warming. Recent analyses suggest that the Northern Hemisphere climate of the past 1,000 years was characterized by an irregular but steady cooling, followed by a strong warming during the 20th century. Temperatures were relatively warm during the 11th to 13th centuries and relatively cool during the 16th to 19th centuries. These periods coincide with what are traditionally known as the medieval Climate Optimum and the Little Ice Age. These anomalies appear to have been most distinct only in and around the North Atlantic region.

Climate Emergency

Climate models have many shortcomings and cannot be policy tools to safeguard the Earth. The general-circulation models of climate on which international policy is at present founded are not true for the purpose. Current climate policies pointlessly and grievously undermine the economic system, putting lives at risk in countries denied access to affordable and reliable energy resource for economic development and quality life. The reality of the present climatic condition is that the world has warmed (if the measured global average temperature is correct) at less than half the originally predicted rate, and at less than half the rate to be expected on the basis of net anthropogenic forcing and radiative imbalance. Sea level rise prediction has been miserably failed in establishing the impact of global warming and polar ice melts. Climate model tells us nothing but that we are far from understanding climate change. The climate model exaggerates the effect of greenhouse gases such as CO_2 ignoring the fact that the atmosphere enriched with CO_2 is beneficial. Anthropogenic greenhouse gas (CO_2) and global warming the two attributes are blamed for climate change. Prediction of extinction of civilization and ecosystem due to polar ice melt and sea level rise is in the forefront of scientific debate. Geological records of the last 450 thousand years suggest that global temperature rise has occurred few hundred years ahead of CO_2 concentration in the atmosphere and is not responsible for the global warming.

On the otherhand dust concentration in the atmosphere has increased much earlier than global temperature rise signifying the impact of volcanic activities for the increase of greenhouse gas in the atmosphere as a heat trapper. Further, 550 million years reconstruction indicates that global temperature and CO_2 concentration are the independent variables and bear negative correlation between them. Climate changes causing biotic extinction can occur in glacial-interglacial cycle at approximately 100 thousand years interval. Each glacial and interglacial period again fluctuates between warm and cold phases. Currently the Earth is passing through modern maximum of the interglacial period which occurs for the last 12000 years. However, after 1998 the trend in global warming is downward signifying another mini-ice age in near future. Fossil fuel burning is not the reason for whatever increment of CO_2 in the atmosphere and temperature increase. It is the acute denial of humanity for the last 2000 years is the reason for "Little Ice Age" and another expected future "Little Ice Age" (Fig. 7). Mass imbalance of the Earth will affect the centrifugal force and angular momentum of the Earth and will cause all types of natural and geological disasters. Mass imbalance of the Earth will also occur due to all adverse anthropogenic factors like all evil acts, exploitation, hypocrisy, power, wealth, war and denial of humanity, in addition to the geological factors. Hence, it is not the climate change hoax, rather all kinds of pollution (both air and water) and environmental disaster need to be addressed as crisis and emergency in achieving holistic safety and security from all kind of criminal acts.

Pollution and Environment

Global pollution and environmental degradation have started since the beginning of industrial age around 1760 and got intensified since the World War I. According to the IPCC, global temperature increased 0.8^{o}C from 1880 to 2013 which is only 0.3% and declared as a climate emergency. But during the same period world population has increased from 1.5 billion to 7 billion, supremacy, power and money has led to deny humanity, and around 40 million people have died during World War I and during World War II more than 75 million alone. Pollution due to these wars and the war currently going on, we can say what amount of pollution of air and water has occurred and will occur. In addition to the societal pollution, the natural pollution caused by the Toba super-eruption about 70000 years back that had veil almost entire equatorial and Indian Ocean region of the eastern hemisphere of the earth for long time causing global volcanic glacial climatic condition. Volcanic ash and dust in the atmosphere prevented solar radiation from entering to the earth dropping temperature to such an extent that led to the last glacial age ended around 11000 years back (Fig. 7A). Global mean surface temperature dropped by 3–5°C. Evidence from Greenland

ice cores indicates a 1,000-year period of low δ¹⁸O and increased dust deposition immediately following the eruption. The volcanic ash (known as Toba ash deposited in the Quaternary geological layers) and the dust that polluted ocean water of the region and contaminated with elevated arsenic concentration. Mid-Holocene marine transgression (Khan et al., 2000) around 8000 years back led to contaminate the aquifer system of all the deltas in the region including Ganges-Brahmaputra Delta, Mekong delta in Vietnam, Indus Delta in Pakistan and other small deltas of the East Asia with arsenic. This contamination today has caused acute arsenic slow poisoning to the millions of people in the region. Pollution due to polythene, garbage and other industrial waste disposal increasing in geometric progression. But it seems we are not much concern about such danger. But fossil fuel burning, and CO_2 emission have been blamed for 0.3% increase of global average temperature which strongly support for very stable temperature the Earth is maintaining.

Current climate policies pointlessly and grievously undermine the economic system, putting lives at risk in countries denied access to affordable and reliable energy resource for economic development and quality life. Pollution and environmental hazards are the major threat to the security of blue economy not only in the maritime sector but also in the continental part. Anthropogenic pollution will destroy biotic and ecosystem in the maritime sector and human system in the continental part. It is very likely that "combustible mixture of ignorance and power is going to blow up our civilization". Pollution and environmental hazards due to anthropogenic and natural causes are the major threat to the society and ecosystem. The anthropogenic pollution includes all industrial waste, all warheads (explosive/toxic material), all nuclear waste those continuously polluting both our surface and subsurface environment (Fig. 14). Under the framework of humanity, the societal non-exploiting attitude, dedication and trans-regional integrated model of friendship, trust and honesty need to be achieved for sustainability of energy, water and friendly environment. All kinds of physical, chemical and biological pollutions are the major threat to the security and sustainability of blue economy of the maritime sector.

Pollution in the Bay of Bengal

Pollution in the Bay of Bengal is the major concern for the South Asia region that threatens the holistic safety and security measures against all sorts of crime in the region. Major river systems like Hoogly, Damodar, Mahanadi, Godavari in India, Ganges-Brahmaputra-Meghna in Bangladesh, Naf, Irrawaddi in Mayanmar are continuously discharging pollutants including the pollutants of the coastal belt into the Bay of Bengal. All the estuaries are the major depo-centers of all kinds of pollutants.

Figure 14: Industrial pollution from harbor at Chottogram to the Bay of Bengal.

Industrial Pollutants from harbour to sea
(Karnaphuli River Chottogram)
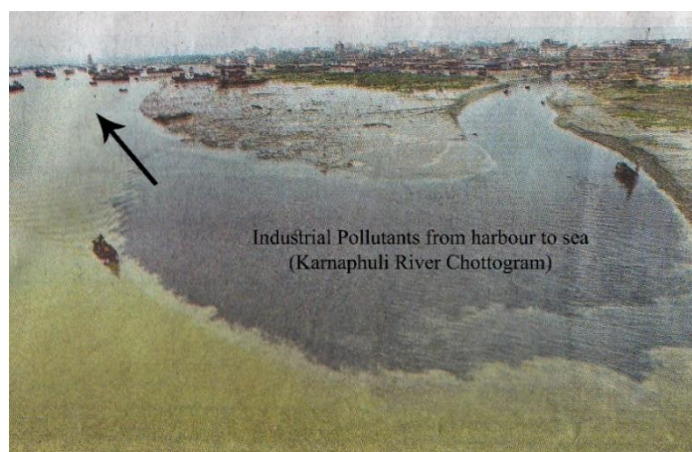
Plastic debris in the marine environment has serious negative impacts on marine resources, fisheries as well as on the use of coastal areas for tourism. It is also a threat to our precious Blue Economy. Globally, one million plastic bottles are purchased every minute. Around 8 million metric tons of plastics go into the oceans every year (Fig. 15). Over 46,000 pieces of plastics are found in one

square mile of ocean. The global production and consumption of plastics have continued to rise, and it is estimated that by 2050, there will be more plastics than fishes in the world's oceans. Every year about 2 lakh tons of plastics enter in the Bay of Bengal from Bangladesh. Every year, 60-65 ships are broken in Chattogram and Khulna. Population pressure, poor waste management practices and shipbreaking are the mostly responsible for such pollution.

Figure 15: Pollutants on the way to Bay of Bengal.

Figure 16: Facts about ongoing global pollution scenario.

Plastic dumping of estuary

Plastic and garbage along coast

Plastic and garbage in the beach

Great Pacific garbage patch $20 million clean up fails to collect plastic

South India Bay of Bengal coast line thretened to pollution

Oil seepage from ship

Plastic is found in the stomach of fish and large mammals in different parts of the world. For instance, a dead whale found in Thailand had 80 plastic bags in its stomach. Fishes of the Pacific

coast are estimated to consume over 2,200 tons of plastic in a year. Microplastics, which are tiny pieces of plastic or fibres smaller than 5 mm, are even a more dangerous form of marine debris/litter. About 80 percent of marine litter is microplastics. Face wash, toothpaste, scrubs and anti-ageing creams contain thousands of microplastics per product. A single shower can result in 100,000 plastic particles entering the ocean. Microplastics (also known as microbeads) are too small to be retained by the filters used at sewage treatment plants. Fish and shellfish ingest microplastics, hence what goes in the sea goes inside us (Fig. 16). In Chennai, contaminated water in a rubbish dump where water polluted by chemicals from plastics and by sewage find its way into the Bay of Bengal. In India, 6,000 tonnes of plastic waste lies uncollected every day. Some of this pollutes and contaminates the food and water along the Bay of Bengal coast. Marine plastic pollution costs the world up to $2.5tn a year. Social and economic price of plastic waste to global society has been underestimated.

Conclusion

Climate change is an idea circulating anxiously in the domains of domestic politics and international diplomacy. Eradication and protection from crime and pollution, and restoration of security for sustainable development of blue economy of maritime states do not depend on climate change hoax. Climate and climate change can principally occur due to the solar, geological and natural events and cannot be predicted by human and anthropogenic time frame. Fossil fuel burning is not the reason for whatever increment of CO_2 in the atmosphere and temperature increase. Climate can change only between glacial and interglacial conditions. The Earth is passing through inter-glacial period with several fluctuations of cold and warm phases. Hence the next climate change can occur as glacial period. Despite the dominance of warm phase in the present interglacial period, expanded record of temperatures since the end of the last glacial period reveals that global temperatures have been falling for the past 8000 years. Global temperature and CO_2 concentration in the atmosphere are the two independent variables and the anthropogenic greenhouse gas has no relation to the global temperature variations. Sea level rise is the most legitimate concern of global warming and polar ice melt. But sea level will not rise due to global warming and polar ice melt. It is the weather pattern that can fluctuates with temperature and precipitation in each glacial and interglacial condition. Temperature and precipitation are the only two parameters that divides the Earth into five climatic zones viz., polar, continental, temperate, dry and tropical. Current climate policies pointlessly and grievously undermine the economic system, putting lives at risk in countries denied access to affordable and reliable energy resource for economic development and quality life. Climate model tells us nothing but that we are far from understanding climate change. Large-scale volcanic activity may last only a few days, but the massive outpouring of gases and ash can influence weather pattern for years.

It is not the climate change hoax, rather all kinds of pollution (both air and water) and environmental disaster need to be addressed as crisis and emergency in achieving holistic safety and security from all kind of criminal acts in the maritime sector. All kinds of physical, chemical and biological pollutions are the major threat to the security and sustainability of blue economy of the maritime sector. Pollution and environmental hazards due to natural and anthropogenic reasons, are the major forcing agents against the holistic security in the maritime sector. Natural including geological events can cause severe environmental hazards through cyclone, storm surge, flood, saline water encroachment, volcanic activities, mud diapirism, mud volcanism, slope failure, submarine landslide, turbidites, shallow gas, natural gas hydrates, shallow water flows, active fluid seepage, seafloor pockmark formation, seismicity and seismicity induced trans-oceanic tsunami, and local tsunami. Anthropogenic processes and activities due to continuous emergence of urbanization and increased population along the coastal belt of the maritime nations pose serious threats to the blue economy, ocean health and biodiversity. Global warming and climate change are the paradoxical issues and not related to environmental safety and security of the Earth.

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Praava health: Pioneering app-based healthcare delivery system in Bangladesh

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Keywords

Bangladesh, Healthcare Delivery System, Praava Health, App-based Healthcare, Hub and Spoke Model, e-Health.

Abstract

Purpose of the research: Healthcare in Bangladesh is a significant and rapidly growing market, where public and private sector institutions cater to 160 million people. Current practices in the healthcare delivery system are challenging traditional methods. As a result, many tech-based healthcare and health delivery practices have been introduced around the world. In this case, we compared how Bangladesh is performing in its healthcare development sector in comparison to the globally established ideal healthcare delivery practices and trends. We explored Praava, a newly established healthcare provider, and how it offers to revolutionize healthcare practices in Bangladesh.

Design/Methodology: The study was conducted based on secondary data sourced from online and offline sources, including scholarly journals and newspaper articles using the exploratory case study method.

Results/Findings: We found through our research that E-Health, Tele-Health, or the concepts like the Health Information System (HIS) are relatively new in Bangladesh. Therefore, when Praava, an app-based healthcare provider, introduced these services in Bangladesh, it is not instantly adopted regardless of its merits. In this case, we studied and compared the Roger's Innovation Adoption Model to understand where the Bangladesh Healthcare market stands to embrace these innovative ventures. We also examined the reasons, barriers, untapped opportunities, or future challenges that might await Praava's fate. Besides, we analyzed Praava's unique Hub and Spoke model that we believe will prove to be a sustainable organizational structure in this part of the world.

Practical implication/Conclusion: There is a huge gap in patient expectations and actual service quality in Bangladesh that tech-based healthcare providers are trying to cater to. However, the challenge lies in educating these consumers to utilize the benefits that tech-based healthcare providers could offer through their organizational model. Organizations like Praava Health could successfully educate, convince the users, and utilize the first-mover benefit as innovative healthcare providers in Bangladesh.

Transfiguration and adoption of University based entrepreneurship ecosystem in Bangladesh: A Case Study of Daffodil International University

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Abstract
   This paper advocates for University Based Entrepreneurial Ecosystem as an unconventional tool in entrepreneurship development for a country when creation of new business is a dare in this fast changing and competitive age. Initiating university based entrepreneurial ecosystem can be one solution to a socio-economic problem. A university can play a vital role in developing entrepreneur through systematic process of proper guidance & mentoring. A University based entrepreneurial ecosystem will facilitate key ecosystem enablers for innovative value creation and knowledge commercialization. Engagement with entrepreneurial activities creates enterprising communities. This study undertakes the intense combination of literature on university based entrepreneurial ecosystem (UBEE) and shares a conceptual framework for application within a university-based framework. This study suggests university based entrepreneurial ecosystem (UBEE) will nurture the budding businesses and help to transform in sustenance and responsible growth. This framework will not only enhance the industry academia relationship for generating more values to society, but also directly impact on employment generation. This paper recommends a framework to develop, initiate and implement the idea throughout the university to effect in creating ventures. It requires an emphasis on working on the business ideas, collaboration, appropriate mentoring, networking and strategic hookup, funding, launching and some initiatives, that have not yet been discovered or that need to be created.

Role of cooperative investment policy to accelerate the entrepreneurship and improve the poverty condition in Bangladesh

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Abstract
> The paper focus on 'co-operative investment policy' as a poverty alleviation tool in Bangladesh. Poverty is a national issue and cause of socio-economic depression in Bangladesh. Since the independent of Bangladesh in 1971, the government and the NGOs are applying many policies to alleviate the poverty, but no policy has brought a remarkable outcome.
>
> The main purpose of the paper is to examine the causes for high rate of poverty in Bangladesh and insufficiency of the government agencies that are working to alleviate the poverty and propose innovative approaches to accelerate the entrepreneurship and involve the impoverished section of the population to entrepreneurship with a view to improve the poverty condition.
>
> The study has been conducted by structural and semi-structural questionnaires and face-to-face interview. A set of 60 structural questionnaires and same number of semi-structural questionnaires were given to 100 respondents of all professions, classes and ages of people.
>
> In this study, a cooperative investment policy and a government action plan have been drawn up based on coordination between the various agencies, which allow the impoverished section of the population to save and invest collectively in order to involve them in entrepreneurship to lift them out of the poverty cycle and bring sustainable development

Corporate entrepreneurship in India: The road less travelled

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Abstract
Change in business has become sine qua non with change in business environment. Darwin's Law of the 'survival of the fittest' suggests either change or perish. In order to adapt to the changing business environment, corporations must keep on changing by thinking uniquely and entrepreneurially. Thinking entrepreneurially, or say, innovatively in the existing corporations is called 'corporate entrepreneurship'. The notion and practice of corporate entrepreneurship have become very dominant and has been on increase in the western countries. However, corporate entrepreneurship could so far not make any perceptible headway in the Indian corporations. Indian corporations have yet to trudge on this relatively less known path called 'corporate entrepreneurship.'

It is against this backdrop; an attempt has made in this paper to present an overview of this relatively less travelled path of corporate entrepreneurship in India. Accordingly, it covers the aspects like what corporate entrepreneurship is, how it is different from general entrepreneurship, what are its drivers, prerequisites and barriers, and what makes corporate entrepreneurship successful.

Introduction

Of late, a new breed of entrepreneurship has emerged known as *'corporate entrepreneurship'* also called *'intrapreneurship.'* As this type of entrepreneurship is emerging with increasing scale and size world-over, it has, therefore, been attracting increasing attention and interest of researchers in the literature of entrepreneurship. Corporate entrepreneurship is an evolutionary concept and is of relatively recent origin in India. As limited is the development of corporate entrepreneurship in India, much more limited is availability of literature / research evidence on whatsoever limited corporate entrepreneurship has developed in the country. In the absence of adequate availability of data and literature on corporate entrepreneurship, our understanding about corporate entrepreneurship in India remains, thus, far from adequate and satisfactory. As such, our understanding on corporate entrepreneurship in India is based mainly on assumptions, predilections and suppositions. It is against this backdrop; the present paper makes a modest attempt to present a systematic overview of corporate entrepreneurship in India. The paper accordingly addresses two major aspects of corporate entrepreneurship like: what is corporate entrepreneurship and how is it different from general entrepreneurship, what are its drivers, prerequisites and barriers, and what makes corporate entrepreneurship successful? These are discussed in seriatim.

Meaning of Corporate Entrepreneurship

The new breed of entrepreneurship emerging within the organizations is called *'Corporate Entrepreneurship'* or *'Intrapreneurship.'* Corporate entrepreneurship emerges from within the confines of an existing enterprise. In big organisations, the top executives are encouraged to catch hold of new

ideas and then convert these into products and services through research and development activities within the framework of organisation. The concept of intrapreneurship has become very popular in developed countries like America. It is found that an increasing number of intrapreneurs are leaving their jobs in big organisations and are starting their own enterprises. Many of such intrapreneurs have become exceedingly successful in their ventures. They are causing a threat to the organisations they left.

Different thinkers have defined corporate entrepreneurship differently. For example, Steve Jobs had defined the term corporate entrepreneurship as: "*a group of people going, in essence, back to the garage, but in a large company.*"

According to Gifford Pinchot (1985), "*Intrapreneur is an entrepreneur within an already established organization.*"

Pramodita Sharma and James J. Chrisman (1999: 11-28) have given an extensive definition of corporate entrepreneurship as "*a process whereby an individual (or a group of individuals) in association with an existing organization, creates a new organization or instigates renewal or innovation within the organization. Under this definition, strategic renewal (which is concerned with organizational renewal involving major strategic and/or structural changes, innovation (which is concerned with introducing something new to the market place), and corporate venturing (corporate entrepreneurial efforts that lead to the creation of new business organizations within the corporate organization) are all important and legitimate parts of the corporate entrepreneurship process.*"

Thus, corporate entrepreneurship is the process by which organizational members within an established company conceive, foster, launch, and manage a new form of business that is distinct in certain respects from the parent company and leverages the parent company's assets, resources, and market.

Corporate Entrepreneurship is Different from Entrepreneurship

That corporate entrepreneurship (also known as intrapreneurship) is different from entrepreneurship (Pinchot 1985) is presented in the following Table 1.

Table 1: Difference between Corporate Entrepreneurship and Entrepreneurship

Difference	Entrepreneurship	Corporate Entrepreneurship
1. Approval	Needs to gather nerve.	Must gather approval.
2. Dependency	Entrepreneur is independent in his / her business operations.	But, intrapreneur is dependent on the entrepreneur, i.e. the owner of the organization
3. Fund	Entrepreneur raises funds himself / herself.	Intrapreneur does not raise funds, but the organization wherein he / she works, raises and provides funds.
4. Search	Entrepreneur searches markets to acquire resources for new venture / enterprise.	Intrapreneur looks inside the organization itself for resources that are so far not used efficiently.
5. Risk	Entrepreneur bears the risk involved in entrepreneurship	Intrapreneur does not bear risk, but the organization bears risk.
6. Operation	Entrepreneur operates from outside	Intrapreneur operates from within the organization itself.
7. Organization	Entrepreneurship creates a new enterprise.	It brings new idea(s) to the already existing organization.
8. Ownership and Control	Entrepreneur owns and controls his / her business, Ownership and control are inseparable in case of entrepreneurship.	Intrapreneur does not own the business, only controls it. Thus, ownership and control are separable in case of corporate entrepreneurship.

Why Corporate Innovation is needed in India?

The business environment is full of uncertainties in terms of market conditions, competition level, customer choice and technological advancements. These render what was workable in the past as obsolete at present. Obviously, only the corporations that fit for the requirements of the time survive and thrive. For this, corporations have either to do something altogether new or add new value to the existing one to make it relevant to the requirement of the time. This is called innovation that enables corporations to fit for the purpose. Following are some major reasons why innovation is significant for modern day corporations in India:

1. Increasing Competition: Ever increasing competition in the market has emerged as one of the most driving forces for innovation in the business world. Organizations are bound to think and act in a newer and innovative manner to have competitive advantage to survive and thrive in today's highly competitive environment. One cannot thrive in today's competitive environment by just working in a stereotypical manner while consumers' choices and preferences towards products and services have been on continuous change. This is placing burdens on organizations to keep up, either by matching product features or attempting to leapfrog over competitors by offering altogether newer and better products and services to the consumers. While the former approach places a limit on the potential for organizational success, the latter one increases potential for success. Evidence suggests that the successful organizations do not follow others, but one who strive to be the ones to emulate. This can only be done through innovation.

2. Increasing Globalization: By now, market has been shrinking due to globalization. The global market is characterized by large number of customers with varying tastes and preferences towards products and services scattered over vast territory of the world. So, to say, organizations have now access to global market. It has emerged as an opportunity for corporations to serve global customers by identifying new markets and offering newer and better products and services to the customers locates over vast global territory. This calls for implementation of innovations by corporations to thrive in the highly competitive global market.

3. Increasing Consumer Expectations: With advancement in social media and information technology, on the one hand, and availability of increasing options for products and services, on the other, consumers have been becoming increasingly knowledgeable and choosy about what to use so as to improve their standard of living. As such, consumers are not to accept mediocre or obsolete products or services. Such market scenario has primed corporations to innovate, regardless of their industry, and make it core to their business strategy. Failing in doing so means risking becoming irrelevant to consumers.

4. Increasing Technological Advancement: In the face of continuous advancement in technology, technology which was earlier a feature of large corporations, has become now an almost must feature of new start-ups in the Make in India philosophy. Start-ups are often launching with or driving the new technologies. Technology driven innovation is becoming the norm of the day. For example, 3D Printing is hitting critical mass. Thus, using new technologies in a new way and developing new technologies through innovation has become almost essential for corporations to meet the challenge posed by increasing advancement in technology.

5. Changing Workforce Demographics: Corporations have been experiencing changing workforce demographics on the horizon for quite some time. Workforce demographics is experienced not only in terms of employees with diverse backgrounds in terms of education, knowledge, and cultures, but also in terms of generational gaps. For example, while the number of baby-boomers has been almost to retire, the number of Generation Y employees is on continuous increase. This is also posing the problem of talent acquisition and retention in already shortage of talented manpower available in the market. This necessitates corporations to become innovative in their approach towards human resource practices ranging from attraction to development to retention of employees. Of late, integration of 3Ps, i.e. Profit, People and Planet has emerged as a new challenge for corporations to survive in today's highly sensitive society. Addressing this new

challenge obviously requires innovative approaches and solutions. Corporations that follow the approach have been experiencing competitive advantage to thrive in the business environment of the time.

What are the Drivers of Corporate Entrepreneurship in India?

Corporate entrepreneurship essentially involves replacing the *status quo* by introducing change in manner of doing business. Change is generally resisted by the stakeholders. Then question arises is what drives change to replace *status quo.* Research evidence (Khanka 2009: 209-218) suggests that there are certain drivers that facilitate the emergence and introduction of entrepreneurship and for that matter corporate entrepreneurship in an existing organization. These include but are not limited to the following only:

Organization Culture: Innovative thinking as a norm of organizational culture serves as a key driver in developing entrepreneurial mind-set among the employees in the organization. More intensively the employees hold the belief in innovative thinking, greater is its effect on fostering entrepreneurial mind-set among the employees and *vice versa*.

Organizational Structure: As against rigid organizational structure, a flexible structure serves as more effective driver to effect innovative thinking among the employees. The reason is flexibility in structure provides employees required scope and freedom in doing their works.

Organization Policy: More favourable the organizational policy, more possibilities for innovative thinking for employees and vice versa. Here, 3M Co.'s policy of allowing its engineers and scientists to spend 15% of their time on projects of their own design is worth mentioning.

Top Management Support: No idea, no matter how much new and promising it is, can fructify without approval and needed support from the top management. In fact, assurance of support from top management serves as an encouragement for employees to search for new ideas and implement the same.

Resource Availability: Like any activity, innovative thinking cannot happen in vacuum but on the availability of required resources. Thus, the availability of required resources also serves as a driver to foster innovative thinking in the organization.

Risk-Taking and Failure Tolerance: That organization is ready to take risk in implementing new ideas and accept failure, if any, as a learning experience also serve as effective drivers to effect innovative thinking in the organization.

Compensation and Incentive System: Provision for compensation and incentives to the employees generating new ideas and wealth also serve as drivers to inject innovative thinking among the employees. Dr. Nelson Levy, a former Vice President of Research and Development and President of various global pharmaceutical companies once quipped, "*I might as well give my people 15% paid leave!*"

Possible Forms of Corporate Entrepreneurship

Corporate entrepreneurship can take place in the following different forms:

Entering New Business: Entering into a new business by an established organization is one of the main forms of corporate entrepreneurship. An established organization due to various reasons like decline in the existing business or identifying the availability of new emerging business opportunities in the given environment, may be interested to enter into a new business venture. Examples of existing corporations entering new business abound in corporate India. Bharati Enterprises, Tata Sons, Reliance Industries, etc. are such examples to name a few.

Championing New Product Idea: The other form of corporate entrepreneurship is a new product idea championed by an individual or individuals within a corporate context. In fact, this is the most famous form of corporate entrepreneurship when managers / executives can apply their creative thinking to evolve some new product ideas for the organization. For example, in Bharati Enterprises, professionals are required to perform in an entrepreneurial manner, called '*professional entrepreneurs,*' to find out better way to do the same function. With this professional entrepreneurial

spirit, Bharati has come up with new solutions to old problems, newer versions to existing solutions, new solutions to new problems, and even paradigm shifts in its business. This innovative thinking has made Bharati the first telecom player in India to outsource its functions such as IT network, call centres, distributions, and more recently tower companies.

Creation of Entrepreneurial Philosophy: Fostering entrepreneurial philosophy or culture within the entire organization is yet another form of corporate entrepreneurship. This is a situation when efforts are made to develop entrepreneurial mindset among the organizational members so that entrepreneurial philosophy permeates throughout the organization. For example, Google follows this philosophy by creating an environment in which all Googlers think and act in an innovative or entrepreneurial manner. This entrepreneurial philosophy has been a lynchpin behind every success of Google and other successful organizations like Bharati

Besides above factors, there are yet other conditions too necessary to make corporate entrepreneurship successful. These include being gender neutral, independent thinking, fostering a questioning culture and engendering a more egalitarian set up

Models of Corporate Entrepreneurship

Based on an in-depth research study of 30 corporations as diverse as Google, DuPont, and Cargill, Robert Wolcott and Michael Lippitz (2007) reached to the conclusion that approach to corporate entrepreneurship, depending on two dimensions under the direct control of management is likely to vary from company to company. The two dimensions are: (1) Organizational Ownership, i.e., who within the organization has primary ownership for the creation of new businesses? (2) Resource Authority i.e., is there a dedicated fund allocated to corporate entrepreneurship? Together the two dimensions generate a matrix with four dominant models of corporate entrepreneurship:

A brief description of each of these follows in seriatim.

The Opportunist Model: There are ample evidences to mention that most of companies begin with what is called the *"Opportunist"* model of corporate entrepreneurship. Such corporate entrepreneurship takes place when some intrepid project champion without any designated organizational ownership or resources proceeds to seize available opportunity. In fact, this is the typical way how a start-up company turns an intrepid visionary's dream into reality. The intrepid champions especially in large established companies, must toil against the organizational odds of one type or other. Therefore, corporate entrepreneurship to be successful within opportunist model requires favourable organizational environment when top management is supportive and open to experimentation. Without such type of supportive environment, good ideas can easily fall through organizational cracks or receive insufficient funding to prove feasible.

The Enabler Model: The enabler model of corporate entrepreneurship is based on the premise that employees in an organization will be willing to develop new ideas / concepts provided they are provided adequate and required support. Employees are not given any formal form of ownership to pursue new ideas but are provided with clarity on which opportunities to pursue, guidelines for funding, recruitment and retention of entrepreneurially minded employees and, above all, active support from top management. Google Inc. presents the excellent enabler model of corporate entrepreneurship where employees at Google can spend 20% of their time to promote their ideas to colleagues, develop their concepts and build prototypes. It is important to mention that at Google no preconceived criteria or hurdle apply to a project. The project can continue till it appears to have potential to serve the interest of Google employees.

The Advocate Model: In the advocate model, company assigns ownership to a group of organizational members for the creation of new businesses with modest provision for funds. Here is an excellent example of the advocate model of corporate entrepreneurship practiced by E.I. du Pont de Nemours and Co., the 200-year-old global conglomerate. When CEO Chad Holliday, in 1999, realized that the company's growth had declined, Clad Holliday assigned DuPont veteran Robert A. Cooper to head a group of five full-time employees to focus on company growth. The group was

provided with assistance required from idea conceptualization to its commercialization. For instance, it includes a four-day "business builder" session that helped group members generate and prioritize their different business ideas and concepts. This was followed by spending four to eight weeks period to develop the business plan of the ideas / concepts so developed. The result was the proven Market Driven Growth program at E.I. du Pont de Nemours and Co.

The Producer Model: As with the enabler and advocate models, the producer model of corporate entrepreneurship also aims at encouraging latent entrepreneurs within the organization. Accordingly, organizational members are assigned responsibility, with enough provisions for funds, to develop new ideas and concepts for business growth. To quote, Motorola has a dedicated staff of more than 35 people as corporate entrepreneurship group with an annual budget corpus in the tens of millions of dollars. The producer model, at the same time, also tries to protect emerging projects from turf battles, encourage collaboration across the units, and create pathways for entrepreneurial executives to pursue careers outside their business units. This gives emergence to independent entrepreneurs which may become threat to the organizations they left. However, the producer model is subject to suffer from certain challenges like:

First, it involves significant investments to be made over the period.

Second, integrating successful new projects developed through corporate entrepreneurship into the established business units is often found difficult.

Third, the corporate entrepreneurship group, particularly when they have pilfered top talent of organization, tend to emerge as threats to existing business units.

Now, the four models can be summarized as follows:

The Opportunist Model	Diffused ownership and *ad hoc* resource allocation
The Enabler Model	Diffused ownership and dedicated resources
The Advocate Model	Focused ownership and *ad hoc* resource allocation
The Producer Method	Focused ownership and dedicated resource

How to Nurture Corporate Entrepreneurship in India?

For corporate entrepreneurship to be successful, organizations need to nurture innovating thinking, also called, entrepreneurial mind-set among their employees. To nurture innovative thinking in organizations, management needs to provide the freedom supported by encouragement to employees capable to develop new ideas (Dess, Lumpkin and McGee 1999: 85-102). For this to happen, organizations need to take certain steps to nurture the innovative thinking among their employees. These include but are not limited to the following only:

Develop Innovative Philosophy: Innovation or creativity (i.e. thinking out of the box) needs to jell with the philosophy of the organization. So, to say, organization needs to foster creative or innovative philosophy to more and more innovations take place.

Design Flexible Organizational Structure: Innovative thinking or thinking requires facilitations like flexible organizational structure. Rigid organization structure limits rather hamper creative thinking which is the hallmark of innovation. Employees also need to be encouraged to circumvent the rigid organizational structure and procedure.

Recognize and Reward Innovative Employees: Innovative employees need to be recognized and rewarded for their innovative ideas and outcomes. This helps in two ways. *First,* the innovative employees get encouraged for their innovation and other employees get motivated to be innovative for getting recognition and reward. *Second,* this fosters spirit of innovative thinking among the employees which, in turn, improves the quality of innovation in the organization. Reward system devised should other employees to risk and achieve.

Accept Failure as Learning Experience: That failure in new experiments would not be liked rather punished by the organization stops employees from experimenting new ideas in their works. Recognizing that many good innovations have taken place after initially becoming failure, organizations should accept failures, if any, as learning experience to encourage employees to think

in innovative manner. In other words, employees should feel free to experiment new ideas without fear of failure and punishment.

Allow Bootlegging of Ideas: One way to nurture innovative thinking in the organization is allowing employees to secretly working in innovative manner all the times: be at work or off the work. In other words, employees should be allowed and encouraged to live their innovative thinking day in and day out.

Types of Corporate Innovation

Corporate innovations are classified into two broad types:

Radical Innovation: Radical innovation is also known as 'disruptive' or 'discontinuous' innovation. Radical innovation means to find out an altogether new method of doing business. Tushman and Romanelli (1985: 171-222) have defined radical innovation as "*processes of reorientation wherein patterns of consistency are fundamentally reordered.*" Radical innovation is found as a complex, difficult and even risky process. It is usually the smaller firms or start-ups that can inaugurate and introduce radical innovations.

Incremental Innovation: Incremental innovations is a change that implies small adaptions to the *status quo* (Tushman and Romanelli, 1985: 171-222), and it is often described as a step-by-step process. As a matter of fact, incremental innovation is the dominant form of innovation. A good example of incremental innovation is Google's Gmail, the world's most popular email service. It has been noticed that many a times incremental innovation takes place after a radical innovation introduces a breakthrough. It is also opined that an organization can do 1,000 things 1 percent better rather than waiting to do one thing 1,000 percent better. Research also reveals that incremental innovation is mainly found in service sector of an economy (Sundbo and Gallouj 2000:15-36).

Barriers to Corporate Entrepreneurship in India

"There is nothing more difficult to take in hand, more perilous to conduct, than to take a lead in the introduction of a new order of things, because the innovation has for enemies all those who have done well under the old conditions and lukewarm defenders in those who may do well under the new."   - *Machiavelli,* The Prince

Research evidence suggest that creating new businesses in the existing corporations, or call it corporate entrepreneurship, helps increase profit margins (Wolcott Lippitz 2007). But corporate history is also witnessing that corporate entrepreneurship is littered with failures. Nonetheless, there is no denying the fact that corporations in India have realized the need for promoting entrepreneurial managers within organizations for organizational survival and growth. Nonetheless, there has not been much headway in this direction because of certain barriers to developing corporate entrepreneurship in the country. The major barriers to corporate entrepreneurship in India include:

- Resistance to Change:
- The inherent nature of large organizations
- Lack of entrepreneurial talent
- Inappropriate compensation method
- Conditions Necessary to Make Corporate Entrepreneurship Successful

Corporate entrepreneurship, like other economic initiatives, does not happen in vacuum and naturally. For corporate entrepreneurship to take place and develop needs conducive environment in the organization. The conditions necessary to make organizational environment conducive for corporate entrepreneurship to take place in India include but are not limited to the following only:

- Give people ownership
- Make risk taking and failure acceptable
- Create learning culture
- Support people with ideas

- Create a safe place for innovation
- Celebrate and reward entrepreneurial behaviour
- Encourage cross-discipline projects
- Encourage knowledge sharing
- Create and allocate funds
- Concluding Remarks

In today's highly competitive business environment, innovation is no longer a choice but compulsion for organizations to survive and thrive in the market. Innovation is a joint venture between organization and its innovative employees. Therefore, innovation to be effective, both must play their roles.

One, organizations must create innovative environment at workplace by way of extending encouragement and needed support to entrepreneurial employees to concentrate on experimenting innovations in the organizations. Experience shows nothing works like encouragement in making people to exert their best mite in performing their jobs. Here, the views of Robert D. Hishrich's et.al. (2017) seem worth citing: *"If your employees aren't innovating, your company is losing its competitive edge. Use Corporate Entrepreneurship to give your mavericks what they need to keep your company on top—all over the world."*

Two, organizational initiatives to foster corporate entrepreneurship will be effective only when employees are genuinely interested and committed to act entrepreneurially. Entrepreneurial history of India is a testimony to the fact that mere extending facilities in terms of incentives, concessions, and tax benefits failed to foster entrepreneurship in the country during sixties and seventies. The reason was that people were not ready and willing to assume entrepreneurial (i.e. risk-taking) ventures. This gave genesis to thoughtfully designed interventions called 'Entrepreneurship Development Programmes (EDP's) to prepare people to assume entrepreneurial career. EDP has by now become a movement in India and is followed by several Asian Countries in their efforts to develop entrepreneurship. Without these, any deliberation of corporate entrepreneurship will be just rhetoric and fledging a dead horse. Sooner these happen, better will be corporate entrepreneurship in India.

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Measurement of levels of service quality in online shopping: Bangladesh Perspective

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Key words
Service quality, SERVQUAL model, online entrepreneur, service gap.

Abstract
In the field of e-commerce, the growth of service quality is increasing. Online shopping is a well-known trend in this era. To maintain a sustainable development of the service quality in online shopping, measuring customer satisfaction has become a big concern in Bangladesh. Entrepreneurs are trying to provide various e-services to capture customer satisfaction. But without identifying the gap between the expected and actual quality in online shopping, development cannot be enriched. In this paper, the service quality of on-line shopping will be explored through the viewpoints of both actual and expected service of customers. The study will employ the SERVQUAL model to observe the service quality of online entrepreneurs and explore the factors affecting the service quality. For conducting this research, 100 respondents in Dhaka have selected. This study tries to identify several problems faced by the consumers regarding online shopping and gives some recommendations to solve those problems. It is found from data analysis that significant gap exists between the customer expectations in all the items under all the dimensions of the chosen model. Assurance dimension has shown the highest gap and the second highest gap exist in the responsiveness dimension of the SERVQUAL model. This initiative will be helpful to increase customer satisfaction, ensure customer retention and develop competitive advantage regarding online shopping. The findings will have implications for the online entrepreneurs as there are requirements to fulfil the perception of consumers in Bangladesh.

Sharing economy: conceptualization; motivators and barriers; and avenues for research in Bangladesh

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Abstract:

With the advancement of information and communication technologies, century-old "sharing activities" between friends, family, and neighbors have extended to strangers based on various commercial models, often aided by mobile-app-based technologies. Globally, prominent sharing-based services include Uber, Lyft, and Airbnb, which have become behemoths in terms of their valuation, revenue, and number of users. Uber is reported to have over 100 million users globally. Bangladesh has also witnessed a rise in sharing-based services of both global and local origins, which include ride-sharing businesses such as Uber, Pathao, and Shohoz; home sharing such as Airbnb; and parking space sharing such as ParkingKoi. Pathao and Shohoz have already raised equity funds of $10 million and $15 million, respectively. A PwC forecast suggests that sharing-based services will account for total revenues of $335 billion by 2025. Sharing services have severely disrupted traditional business models and the economy they collectively encompass is referred to as the "Sharing Economy." Based on a systematic literature review of top management journals and other scholarly works, we present the most overarching conceptualization of sharing-based services. Taking this knowledge forward, this paper not only conceptualizes and compares sharing-based services in Bangladesh but also identifies ''collaborative consumption'' as the most dominant type of sharing-based services among them. This paper also presents scholarly works on the customers' motivators and barriers, which creates grounds for future research efforts in Bangladesh concerning collaborative consumption services.

Introduction

The advancement in information technologies has transformed the primitive nature of sharing activities restricted to friends, family, and neighbors into the software-aided exchanges among strangers. Technology-enabled sharing activities can be traced back to 1999 when Napster facilitated the sharing of digital music among peers as a form of peer-to-peer (P2P) file sharing (Belk, 2014). Over the years, start-up companies, with the help of their web-based platforms accessible from mobile applications, have created a bridge between the owners and interested people to ensure the shared consumption of limited resources. From pet-sitting (e.g. DogVacay) to parking-space sharing (e.g. JustPark), there are hundreds of web-based platforms (i.e. services) powering the so-called ''sharing economy'' by connecting people both locally and globally. Although there are definitional disputes among the scholars, one definition of sharing economy could be- consumers granting each other temporary access to under-utilized physical assets ("idle capacity"), possibly for money (Frenken & Schor, 2017).

These services have disrupted several industries and the growth potential of the sharing economy is astonishing. According to the forecast made by PricewaterhouseCoopers (PwC), five sectors of sharing economy will increase global revenues from $15 billion in 2015 to $335 billion in 2025 (PricewaterhouseCoopers LLP, 2015). Each night, on an average 2 million people are sleeping in the beds of strangers through Airbnb- a peer-to-peer accommodation renting platform (Airbnb, Inc., 2019). However, there are also failure instances of these services across the globe. For example, two

of the most valued Unicorn Companies (valued at $1 billion or more) in the US have lost significant share values recently and are not expected to be profitable in near future (Monica, 2019). Due to its inability to attract users, Stayzilla (an Indian peer-to-peer accommodation sharing platform) closed its operation in 2017 (Täuscher & Kietzmann, 2017).

Academic scholars from diverging academic disciplines have attempted to unravel various aspects of this novel phenomenon (Sutherland & Jarrahi, 2018). The earlier cohorts of academic works focused mostly on the conceptualizations of sharing economy, the conceptualizations of the associated business models, and the motivators and barriers to users' participation in these models. In these efforts, academic works have produced fragmented results. The dizzying level of terms (e.g. sharing economy platform economy, two-sided markets, collaborative consumption, access-based consumption, etc.) produced by the scholars bears the evidence of such fragmented results (Benoit, et al., 2017; Sutherland & Jarrahi, 2018). Furthermore, most of the conceptual and empirical research does not distinguish among various sharing-based services (Davidson, et al., 2017). Although there are already hundreds of works existing in the academic sphere, there is a dearth of works that have proposed an overarching conceptualization of this novel phenomenon.

We observe that there is a striking contrast between the number of academic works focusing on the western sharing economies and the Bangladeshi one, although Bangladesh, too, has seen the rise of sharing-based services over the past years. In Bangladesh, the ridesharing has become a $260 million (22 billion taka) industry (Rahman, 2019) with 6 million rides each month (Kader, 2018) in less than 5 years. However, like other western markets, sharing-based services in Bangladesh are facing tough times with respect to achieving sustainable revenue growth and user acquisition. For example, one ride-sharing start-up valued at $100 million recently had to downsize nearly 300 mid to top-level employees due to slow revenue growth (Islam, 2019). This incident has shaken the country's entire start-up community and is feared to have long-term consequences. Although few scholarly works have addressed the limited aspects of sharing economy in Bangladesh, the need for academic works that attempt to conceptualize sharing-based services in an overarching manner and unravel the users' motivators and barriers is deeply felt.

Built upon a broader research study, this paper aims to close the above research gaps. More specifically, on a using Systematic Literature Review method, we have attempted to contribute in the following ways.

First, we present and compare the existing seminal conceptualizations of the sharing-based services to find the most overarching conceptualization that well-explains the boundaries among the services. We take this conceptualization forward to differentiate among the sharing-based services operating in Bangladesh. To the best of our knowledge, this is the first paper that has attempted to conceptualize the sharing-based services in Bangladesh.

Second, we present the customers' motivators for and barriers to participation in the sharing-based services based on the existing academic works. With the aim to assist the practitioners (i.e. managers) of sharing-based services in Bangladesh, we present the motivators and barriers for the most dominant type of services identified in the conceptualization phase.

Third, we propose future avenues for research that not only would help to close research gaps but also would help the practitioners in moving the sharing-based services forward.

The structure of this paper is as follows. The next section describes the methodology used to search, identify, and scan the academic works. The 3rd section discusses overall findings from the search and identification activities. The 4th section presents the seminal conceptualizations and finds the most overarching conceptualization. Furthermore, this section analyzes Bangladesh's sharing-based services and differentiates among them, based on the conceptualization identified in the previous section. In the same section, we present the existing scholarly works on the customers' motivators and barriers. The 5th section provides the conclusion in which we discuss this paper's contribution. In the last section, we identify the limitations of this paper and suggest future research avenues.

Methodology

While there are already at least two high-quality works (Cheng, 2016; Sutherland & Jarrahi, 2018) that have used Systematic Literature Review as the method to review extensive agenda of sharing economy literature, we have used similar method to pursue more specific agenda- 1) conceptualization of sharing-based services, and 2) customers' motivators and barriers.

To tackle the searching and identifying the relevant academic works, we followed a multi-step process which we briefly describe below.

First, in order to search for the academic works on the sharing-based services, we have utilized the search terms discovered by Sutherland & Jarrahi (2018). These terms were ''sharing economy'', ''shareconomy'', ''collaborative consumption'', ''collaborative economy'', ''gig economy'', ''access-based consumption'', ''platform economy'', ''peer-to-peer economy'', and ''on-demand economy''.

In the second step, we attempted to identify high-quality journals that could potentially deal with topics related to sharing-based services. The rationale behind focusing primarily on high-quality journals is that major contributions in the field are like to come from these journals (Webster & Watson, 2002). In order to find out the high-quality journals, we consulted with the Erasmus Research Institute of Management (ERIM) Journals List, as suggested by Block, et al., (2016). Using this list, we could identify the best management journals (expressed as STAR) and the second-best management journals (expressed as P).

In the third step, we used the Advanced Search option of Google Scholar to run searches using the search terms identified in the first step. We indicated the time frame between 2010-2019 since research suggests that majority of the works were published after 2013 (Sutherland & Jarrahi, 2018). To limit the irrelevant results, we used the ''exact phrase'' field to input the search terms. We also indicated the specific journal names in the ''return articles published in'' field.

Running searches using the terms as phrases one by one, indicating one specific journal, and setting the time frame resulted in articles that covered a wide range of agenda related to sharing-based services. We scanned and skimmed through the articles to sort out only those that have either proposed any conceptualization or presented the motivators/barriers of sharing-based services. After this process, we finally had the first set of academic works from high-quality journals that served our research aims.

We still needed to address two more concerns. Examining the prior review efforts, we observe that sharing economy has attracted many academic disciplines (e.g. transportation, science & technology, etc.) beyond the management discipline (Cheng, 2016; Sutherland & Jarrahi, 2018). Therefore, it is necessary that we take into consideration academic works beyond the management disciplines to see if these works have conceptualized the sharing-based services or explored the customers' motivators/barriers. To do that, we have followed somewhat similar to a snowball method through which we examined the citations produced by the first set of the academic works (Webster & Watson, 2002). In this way, we were able to include academic works that came from outside the management discipline and which have either proposed any conceptualization or presented the motivators/barriers of sharing-based services. Employing this method also facilitated the inclusion of other works (e.g. books, conference proceeding) beyond journal articles.

Findings

At the end of the above process, we were able to identify academic works from a wide range of journals. These journals were, but not limited to, Journal of Consumer Behaviour, Journal of Consumer Research, Journal of Business Research, Journal of Marketing, International Journal of Hospitality Management, Managing Service, International Journal of Information Management, etc. This paper builds on 16 scholarly works (e.g. journal articles, book, conference proceedings) on sharing economy.

Discussion

We observe that the conceptualizations we have identified are few in numbers but distinct in nature. Although often criticized by scholars (Webster & Watson, 2002), we have followed an author-centric approach for the conceptualizations so that we can review them (by author) individually to fully capture their propositions.

In our review, we have avoided reporting all the available works in the sharing economy literature. Instead, we have taken into consideration and elaborately described only the academic works that purposefully serve to the overall aims of this paper. This review approach is also in line with the suggestions put forwarded by the scholars (Fisch & Block, 2018; Short, 2009).

As cited before, scholars differ in their use of the terms (sharing economy, collaborative consumption, access-based consumption, etc.) in order to explain the same or similar sharing-based services. Additionally, we observe that scholars have cited various examples of sharing-based services to complement their conceptualizations. Before we start presenting the works, we provide brief descriptions of these services covered in the conceptualizations.

Couchsurfing is an online platform that connects people with spare spaces in their homes to people who need a place to stay for a short duration (peer-to-peer). Neither the hosts nor Couchsurfing charges the guests any kind of fee in return.

Airbnb is a peer-to-peer online platform that connects people who want to rent out the unused space on a short-term basis (e.g. one night, one week, etc.) to the people who are looking for such accommodation. Airbnb takes a commission for matching the hosts with guests and the guests need to pay the rent for the accommodation.

Uber is a peer-to-peer online platform that connects drivers with passengers for short-distance trips. Like in Airbnb, Uber takes a commission for matching the drivers with the passengers and the passengers need to pay the fare for the trips.

Zipcar is a platform in which the users of the platform get temporary access to the cars owned by the platform based on membership fees. One of the key differences between Uber and Zipcar is that while Uber is a peer-to-peer platform, Zipcar is not.

We believe the above descriptions of the sharing-based services would be helpful for the readership of this paper. Now, we move on to present the conceptualizations.

Conceptualization of sharing-based services

According to Belk (2014), sharing is derived from both functional reasons and altruistic acts. According to his conceptualization, collaborative consumption is ''people coordinating the acquisition and distribution of a resource for a fee or other compensation''. Since Airbnb and Zipcar promote such coordination of acquisition and distribution of resources, Belk (2014) cites Airbnb and Zipcar as examples of collaborative consumption and labels them as ''pseudo sharing'' due to the presence of transaction. However, since Couchsurfing runs on altruism without any compensation involved, it is a true sharing service. We observe that Airbnb and Zipcar do not have the same business model. While Airbnb is a peer-to-peer platform where peers own the resources (i.e. space), Zipcar itself owns the resources (i.e. cars) to facilitate the sharing among users based on fees. Hence further distinction between their business models is needed which Belk (2014) did not offer.

Lamberton & Rose (2012) extend the classification of shared goods by illustrating Typology of Sharing Systems based on two considerations- rivalry and exclusivity. They try to sort out different sharing contexts by assigning them to 4 distinct quadrants. Quadrant 1 (public goods sharing) holds for lower exclusivity and lower rivalry with the examples of public parks, roads, and schools. Quadrant 2 (access/club goods sharing) accounts for lower rivalry and higher exclusivity with the examples of private clubs or investment clubs. Quadrant 3 (open commercial good sharing) explains lower exclusivity and higher rivalry with the examples of car sharing, bike sharing, etc. Quadrant 4 (closed commercial goods sharing) accounts for higher exclusivity and higher rivalry with the

examples of cell phone sharing, health co-operatives. We observe that this typology, too, does not provide enough distinction between various types of sharing-based services.

Bardhi & Eckhardt (2012) coins the term ''access-based consumption'' in their work with the definition ''transactions that may be market mediated in which no transfer of ownership takes place''. Access-based consumption is different from Belk (2014)'s sharing based on the rationale that, while sharing is motivated by altruistic or prosocial acts, access is derived from economic exchanges and reciprocal benefits (Bardhi & Eckhardt, 2012). This conceptualization has been a seminal work due to its conceptualization of Zipcar-alike services where the platform itself owns the resources and the access is market mediated. However, this conceptualization, too, does not provide any distinct means to differentiate among sharing-based services.

Hamari, et al., (2015) define collaborative consumption as ''the peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community based online services''. They consider sharing economy as an umbrella concept that encompasses other phenomena including collaborative consumption. To understand the scopes of collaborative consumption, Hamari, et al., (2015) mapped 254 collaborative consumption websites. They have separated these 254 websites into two categories according to the mode of exchange: access over ownership and transfer of ownership. Access over ownership accounts for renting, and lending while transfer of ownership accounts for swapping, donating, and purchasing of used goods. We find this mapping contradictory to the works of other scholars. First, transfer of ownership (169 of 254 websites mapped) is not considered as a characteristic of either sharing or access-based consumption. Hence, this mapping directly contradicts the works of Belk (2014) and Bardhi & Eckhardt (2012). Second, Hamari, et al., (2015) cite Zipcar and Airbnb as the examples of collaborative consumption. However, we already know that Airbnb and Zipcar differ significantly with respect to their business models.

According to Botsman & Rogers (2010), social lending, swap trading, car sharing, bartering, co-working, peer-to-peer rental, tool exchange- all of them are examples of collaborative consumption. Botsman & Rogers (2010) classify them into three systems- product service systems, redistributed markets, and collaborative lifestyles. Product Service Systems (PSS) encompasses the services ''that enable multiple products owned by a company to be shared, or products that are privately owned to be shared or rented peer-to-peer''. PSS thus resembles access-based consumption conceptualized by Bardhi and Eckhardt (2012). On the other hand, collaborative lifestyles encompass sharing fewer tangible assets (e.g. space, skills). We support (Belk, 2014)'s criticism about Botsman & Rogers (2010)'s conceptualization of collaborative consumption as "too broad" since this conceptualization does not make any distinction among marketplace exchange, gift giving, and sharing. Also, this conceptualization considers both Zipcar and Airbnb as examples of collaborative consumption, although they differ significantly with respect to their business models.

Habibi, et al., (2016) offer a Sharing-Exchange Continuum has two extreme points- exchange and sharing. While sharing contains characteristics such as nonreciprocal, money irrelevant, etc., the exchange contains reciprocal, balanced exchange, monetary, calculation, etc. as characteristics. According to this continuum, Couchsurfing is positioned more to the sharing side since it has dominant sharing characteristics. On the other hand, Zipcar is positioned more to the exchange side since there are balanced exchanges and high calculation involved. Echoing to Belk (2014), Habibi, et al., (2016) state that collaborative consumption occupies the middle ground between true sharing and true exchange. We observe that this conceptualization distinguishes sharing-based services only based on the notion of sharing and exchange. We think that making further distinction among the services taking into consideration the ownership of resources (i.e. platform owned or peer-owned) would make this conceptualization better.
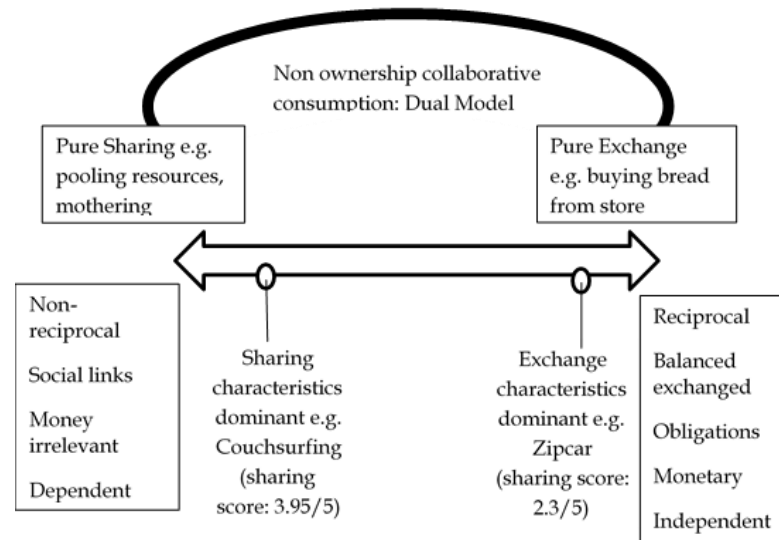
Figure 1: Sharing-exchange continuum, adapted from Habibi, et al., (2016)

Benoit, et al., (2017) provide a framework that helps to conceptualize sharing-based services based on 3 considerations. These are the number and type of actors (dyadic or triadic), the nature of the exchange (i.e. transfer of ownership), and the directness of exchange (i.e. market mediation). We observe that using these considerations, different sharing-based services can be distinguished clearly among themselves.

	Non ownership/access-based services	Collaborative Consumption	Sharing/co-owning
Number and type of actors	Dyadic, between provider and customer	Triadic, between a platform provider, a peer service provider and a customer	Two or more individuals, e.g. within families or friends
Nature of exchange	No ownership transfer, shorter periods of agreed consumption time, sequential use	No ownership transfer, shorter periods of agreed consumption time of underutilized assets from the peer service provider, sequential use	No ownership transfer, Often shared ownerships, therefore simultaneous or sequential use
Directness of exchange	Mediated through market mechanisms	Mediated through market mechanisms	Not mediated through market, but social mechanisms

Table 1: Collaborative consumption and related phenomenon, slightly adapted from Benoit, et al., (2017)

For example, Zipcar corresponds to access-based services since it satisfies all the conditions of the same. On Zipcar, the cars are owned by the platform and shared by customers. Here, the relationship between the actors is dyadic. Zipcar does not involve ownership transfer, rather merely facilitates access to the cars. Additionally, the exchange is market mediated since the customers pay fees to the platform. On the other hand, Airbnb corresponds to collaborative consumption. There are three types of actor on Airbnb. The customer rent the accommodation, the peer service provider rents out his/her space to the customer, and the platform facilitates this renting. Here, the relationship is triadic. Additionally, there is no ownership transfer involved on Airbnb. Lastly, the exchange is market mediated since the platform takes a commission and the peer service provider receives the rent from the customer. Uber, too, corresponds to collaborative consumption based on the above considerations. According to this framework, we may identify Couchsurfing as sharing since Couchsurfing runs on altruism and thus lacks any kind of market mediation.

In the below, Table 2 summarizes all the conceptualizations, related definitions, examples, and their weaknesses and contradictions.

Belk (2014)	Collaborative consumption is people coordinating the acquisition and distribution of a resource for a fee or other compensation	Airbnb, Zipcar	Airbnb and Zipcar do not have the same business model
Lamberton & Rose (2012)	Commercial Sharing System is marketer-managed systems that provide customers with the opportunity to enjoy product benefits without ownership	Zipcar	A distinction among the services is lacking
Bardhi & Eckhardt (2012)	Access-based consumption	Zipcar, Airbnb	A distinction among the services is lacking
Hamari, et al., (2015)	Collaborative Consumption is the peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community based online services	Zipcar, Airbnb	Contradicts with Belk (2014) and Bardhi & Eckhardt (2012)
Botsman & Rogers (2010)	Product Service Systems (PSS) Redistribution Markets Collaborative Lifestyles	Airbnb	Contradicts with Belk (2014), conceptualization is 'too broad''
Habibi, et al., (2016)	Sharing-Exchange Continuum	Airbnb- Collaborative Consumption 2. Couchsurfing- sharing dominant 3. Zipcar- exchange dominant	A distinction among the services is lacking
Benoit, et al., (2017)	Triadic Framework of Collaborative Consumption	Uber	No Lacking

Table 2: Summary of conceptualizations, definitions, examples, and weaknesses

After reviewing the seminal conceptualizations, we identify that the framework provided by Benoit, et al., (2017) explains sharing, collaborative consumption, and access-based services better than any other conceptualizations covered in this paper. Based on our review of the literature, this conceptualization provides the most overarching instrument to date to distinguish among the sharing-based services.

Conceptualizing sharing-based services in Bangladesh

In Bangladesh, ridesharing dominates the sharing-based services in terms of adoption, growth, and fund raised. With only a few listings, Airbnb represents an insignificant presence in Bangladesh, if anything at all. Dhaka, among all other cities in the country, has been the breeding ground for the ride-sharing services. High traffic congestion and high internet penetration rate have made Dhaka a lucrative city to launch and grow these services (Kamal & Ahsan, 2018). In stark contrast to the western cities where car-based ride-sharing services initially throve, Dhaka has seen the boom of motorbike-based ride-sharing services (Ahmed, 2018). This has been true for other Asian cities (e.g. Jakarta) as well with one thing in common among them, the unbearable traffic congestion. Bangladesh's ride-sharing market is currently dominated by four services- Uber, Pathao, Shohoz, and OBHAI. Most of them are active in motorbike-based and car-based ride-sharing services but they differ in their strengths, investment raised, and penetration in the market. Pathao and Shohoz have raised $10 million and $15 million in funding in 2018 (Kader, 2019). Pathao's domination in

motorbike-based ridesharing service has been challenged by both Uber and Shohoz with the introduction of UberMOTO and Shohoz Ride. Uber has been an unbeaten champion in the car-based sharing services and according to unconfirmed data, Uber has around 70% market share in the same. OBHAI is still unchallenged in CNG auto-rickshaw space. Additionally, JoBike- a bicycle sharing service, which is the first of its kind in Bangladesh, has started its operation in Dhaka earlier this year.

Uber in Bangladesh, Shohoz, Pathao, and OBHAI connect the drivers with the passengers willing to take short trips based on the mutually agreed, pre-determined fares. Based on similar mobile applications, and regardless of car or motorbike-based, these platforms have essentially replicated the business model of Uber ride-sharing services available in other countries.

On the other hand, Airbnb in Bangladesh follows the business model like its global model. It connects the people who want to rent out their under-utilized spaces (i.e. hosts) with the people who are looking for a short-term accommodation (i.e. guests). Based on the pre-determined rent set by the hosts, the guests pay the rent. Airbnb charges a commission for facilitating the exchange.

JoBike facilitates renting a bicycle for a short period of time from the nearby docking station. Based on the mobile application, the users can top-up the credit, locate the nearby docking station and unlock the bicycle through a QR code scanning. Jobike bills the users based on a ''pay per minute occupied'' model.

Based on the conceptualization of sharing-based services suggested by (Benoit, et al., 2017), it is possible to distinguish among the services operating in Bangladesh. According to their framework, Uber in Bangladesh, Shohoz, Pathao, and OBHAI are examples of collaborative consumption. All these services have 3 actors (e.g. a Pathao

driver, a passenger, and the platform Pathao itself) and hence the relationship among them is triadic. Also, there is no ownership transfer involved, the resource is owned by the peer service provider (e.g. bike is owned by Shohoz driver), and the consumption is short-term. Additionally, the exchange is market mediated in which the driver charges the customer and the platform charges the commission for facilitating the exchange. Airbnb in Bangladesh, too, satisfies the above criteria and hence is an example of collaborative consumption.

According to Benoit, et al., (2017)'s conceptualization, JoBike follows the business model of access-based consumption. JoBike has two actors (e.g. the customer and the platform itself) and hence the relationship is dyadic in nature. In contrast to the collaborative consumption, the resource (i.e. bicycle) is owned by the platform (i.e. JoBike) itself. Additionally, the consumption is short-term, and the exchange is mediated through market mediation since the customer pays to the platform on a ''pay per minute occupied'' basis.

Motivators for and barriers to using sharing-based services

Scholars have been studying the reasons behind people's acceptance and rejection of sharing-based services. Although our review effort has identified academic works investigating almost all forms of sharing-based services, we present here only the works that have investigated collaborative consumption services. Now that we have identified the most dominant type of sharing-based services prevailing in Bangladesh (i.e. the collaborative consumption), presenting the barriers and motivators for the same bears significant relevance. In contrast to our review of conceptualization where we adopted an author-centric approach, we have followed a concept-centric approach for the motivators and barriers (Fisch & Block, 2018; Webster & Watson, 2002; Short, 2009) so that we can review them as constructs that have been explored by more than one author.

Customers' motivators in collaborative consumption

Our review finds that perceived utility or cost savings play as strong motivators for the customers in using the collaborative consumption services (Hamari, et al., 2015; Habibi, et al., 2016; Tussyadiah & Pesonen, 2018; Möhlmann, 2015). Furthermore, perceived utility or cost savings can have geographical and demographic implications too. For example, a study administered among

Indian customers reveals the mediating effect of perceived utility in their adoption of collaborative consumption services (Hamari, et al., 2015). On the other hand, a study administered among American customers shows that cost savings play as a motivator for the young American travellers in their adoption of collaborative consumption services (Tussyadiah & Pesonen, 2018).

Hedonic experience may act as motivators for the people as Habibi, et al., (2016) find that American customers are willing to adopt these services due to the hedonic experience (i.e. having more fun, enjoying life more, etc.) some of these services provide.

Our review finds that convenience and efficacy have positive effects on the customers' adoption of collaborative consumption services. Customers may find ownership of resources as burdensome and prefer collaborative consumption services instead (Moeller & Wittkowski, 2010). On the other hand, customers' perception that collaborative consumption services make them more effective in daily life (efficacy) may also motivate them in their adoption (Habibi, et al., 2016).

Social appeals have been found as a determinant of customers' adoption of the collaborative consumption services. Habibi, et al., (2016)'s study finds that American customers put forward social appeal (e.g. better relationships with others) as a reason for their adoption of collaborative consumption services. Furthermore, Tussyadiah & Pesonen, (2018)'s study reveals that older Finnish customers put forward social appeal as a motivator for their adoption of collaborative consumption services, especially for the adoption of Airbnb-like short-term accommodation renting services.

Trust may act as a strong motivator for the customers in their adoption. Trust not only determines customers' satisfaction with a collaborative consumption service but also affects the likelihood of using that service again (Möhlmann, 2015).

Customers' barriers to collaborative consumption

Process risk/efficacy has been found as Customers' barriers in collaborative consumption. While process risk may refer to risks of sharing with others (Hawlitschek, et al., 2016), efficacy barrier refers to customers' inability to understand how the platform-based peer-to-peer sharing works (Tussyadiah & Pesonen, 2018).

Our review finds that customers may reject to adopt collaborative consumption services due to the perceived importance they put on owning resources compared to not owning, rather sharing. Moeller & Wittkowski, (2010)'s work provides evidence that importance of possession has significant negative effects on customers' adoption. On the other hand, Hawlitschek, et al., (2016)'s work posits that customers are less like to adopt collaborative consumption services due to the independence they derive from owning resources (independence through ownership).

Distrust/Lack of Privacy has been heavily cited as a strong barrier for the customers in collaborative consumption. Distrust towards the platform and the peer service provider (e.g. Airbnb host) may hinder customers' participation in the exchange activities (Tussyadiah & Pesonen, 2018; So, et al., 2018).

While the perceived cost savings have been found as the motivators for the customers in collaborative consumption, perceived cost savings can also hinder the adoption. Tussyadiah & Pesonen, (2018)'s work bears such evidence where American customers did not adopt collaborative consumption services due to their perception that the cost savings were not enough convincing.

Conclusion

The pervasive nature of sharing economy and its services has disrupted many established industries and business models over the last few years. Additionally, strong growth forecast and a fair share of skepticism about its sustainability have put the sharing-based services at the centre of debates among practitioners, scholars, general public, and policymakers. We observe that, while hundreds of scholarly works have emerged on this new phenomenon, there is a dearth of works that have proposed an overarching conceptualization of sharing-based services. Furthermore, in stark contrast to the level of attention given to the sharing-based services in the developed countries, services operating in Bangladesh have received insignificant scholarly attention.

This paper addresses the above research gaps keeping the sharing-based services in Bangladesh as the focal point. Through a systematic literature review, this paper presents the seminal conceptualizations on the sharing-based services and identifies the most overarching conceptualization. With the help of this conceptualization developed by Benoit, et al., (2017), this paper not only conceptualizes and differentiates the sharing-based services operating in Bangladesh but also identifies collaborative consumption as the most dominant type of sharing-based services among them.

Taking the above findings forward, this paper reviews existing scholarly works and presents customers' motivators for and barriers to participation in collaborative consumption services. This paper discusses cost savings, hedonic experience, convenience, efficacy, social appeals, and trust as the motivators, and process risk, importance of possession, distrust, perceived cost savings as the barriers in customers' adoption. In this way, this paper creates grounds for future scholarly works, which in turn would be helpful for the managers of the collaborative consumption services operating in Bangladesh.

Limitations and avenues for future research

This paper is not without any limitations. While our review of literature has been limited to only a sub-set of top journals, we believe that future review works should include more scholarly resources. The inclusion of more scholarly works regardless of the disciplines would shed more light on the customers' motivators for and barriers to participation in the sharing-based services. On the other hand, to limit the scope of this paper, we have not covered the peer service providers' (e.g. Uber driver) motivators and barriers. Collaborative consumption services are built on peers and thus both the customers and peer service providers bear equal significance. Future efforts could address this gap and present an extensive review of the peer service providers' motivators and barriers in collaborative consumption services.

Furthermore, future research efforts should include empirical studies focusing on both the customers' and peer service providers' motivators and barriers in Bangladesh. Most of the existing scholarly works on these issues are based on developed/other country's collaborative consumption services, which might not be relevant to Bangladesh's contexts. Unravelling customers' and peer service providers' motivators and barriers could significantly assist the practitioners in Bangladesh and may become instrumental for the sustainability of these services.

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Local versus global brands: The internationalization process in Food and Beverage Industry

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Abstract

Purpose of the research: Globalization has been playing a vital role in our lives today considering international products' uses for our daily use and luxuries. The paper consists of a thorough analysis on how the Internationalization process is pushing the local brands to consider global boundaries. The purpose is to investigate the Internationalization process that has changed the dynamics of the Industry considering how the local brands are fighting for its position with the aggressive expansion approaches of the global brands. There are multiple reasons why consumers tend to choose global products over local ones and the most common reason to observe is its 'Quality' but issues such as the global brands' efforts often outweigh even factors like 'Patriostism' in the market.

Methodology: The paper has been constructed based on practical strategy analysis of 10 diversified brands to obtain first-hand information about consumer attitudes. The vital attributes such as Quality, Branding efforts, Brand Image in relation to Premium Pricing has been analysed based on a study of 50 published journal articles on how brands worldwide have been surviving the Industry life cycle.

Findings: Statistical analysis has successfully helped to test variables- Quality and Premium pricing to consider factors leading to global brand choices over the local brands despite its sophisticated quality improvements by the local brands. The result is somewhat surprising where 'Quality' is not the main driver for consumers to choose local products over the global one, yet they tend to pay more for global brands.

Conclusion: Patriotism, Quality, Brand Image and Premium Pricing are some key criteria that firms can use to change the customers preferences of the Industry inducing local consumption choices over global brands. Companies; local and global would now justify their products' features to offer viable products in global business perspective.

The Introduction

The Food and Beverage Industry of Bangladesh is diverse with variety of products of both global and local brands. The most tempting are Pran, Akij, Square food & beverage, Abdul Monem, and Transcom in the market. Many new locals have emerged in order to compete within the local boundaries such as Sajeeb, Dekko etc. The project was initially focused on diversed categories of 5 local brands corresponding to 5 international brands. Both the brands are of same/similar product category and strategies are somewhat similar except some are dissimilar and the potential reasons to limit its business opportunities within the national boundary.

Global strategy as defined in business terms is an organization's strategic guide to globalization. Such a connected world allows a business's revenue to not be to be confined by borders. A business can employ a global business strategy to reap the rewards of trading in a worldwide market (Global Strategy, Wikipedia). Usually a global stararegy is designed when pressure of cost reduction is high and pressure for local responsiveness is also low such as universal Al-tech keyboards for Desktop computers, however, global strategies in this intense arena of global

competition is very difficult to sustain and ultimately a customization/adaptability takes place for example, Coke started with a global and standardized approach, but ultimately it localized its flavours through various modes of entry to spread across the countries and compromised its taste and flavours as well. Internationalization, on the other hand is the attempt to go global with low cost pressures and low local responsiveness. In this process, companies start to trade (import and export) and make FDI.

The chosen products and brands for the paper are as follows:

Ice cream	Igloo	Baskin Robbins
Biscuit	Doreo	Oreo
Noodles	Cocola	Maggi
Soft drinks	Mojo	Coke
Chips	Ring	Lays

Overview of the food and beverage industry in Bangladesh

The food and beverage are a fastest growing industry in Bangladesh since the year of 2000 as Bangladesh is an agriculture-based country. This industry alone contributes 22% of the economy in the nation and around 2.45% of the nation's total workforce (Akter, 2018). Bangladesh being an agricultural nation with an extensive population can contribute to a great extent to the food and beverage industry. Bangladesh is additionally affecting the global market by sending out food and beverage to 90 unique nations on the planet (Akter, 2018). The food and beverage industry are a quickly developing part in Bangladesh, utilizing a noteworthy part of the workforce in the nation. In between 2014 and 2017, the food and beverage industry in Bangladesh developed at an average of 7.7 percent for each annum (Bashar, 2017). Economic Census of 2016 from Bangladesh Bureau of Statistics revealed that there were roughly 246 medium-sized food and beverage companies are providing employment facilities to 19 percent of the mechanical assembling workforce in Bangladesh or 8 percent of the aggregate workforce of Bangladesh. The food industry utilizes 2.45 percent of the nation's aggregate work power and its impact on the GDP was 2.01 percent in 2017 (Kundu, 2017). Also, there are various small industries and local units occupied with food and beverage all through the nation. As per some industry experts, the food and beverage sector in Bangladesh is a 4.5 billion US Dollar industry. In 2017, Bangladesh sent out over $700 million worth of processed foods and beverages, more than 60 percent were shrimp and fish items. Bangladesh's food and beverage industry faces real changes as it undergoes a growth phase in 2018 (Akter, 2018). The Bangladesh food and beverage industry have expanded about 22% of the nation's aggregate creation and utilizes about 20% of the industrial generation workforce and 2.45% of the nation's aggregate workforce (Ahmed, 2018). It is a 4.5-billion-dollar work that has around 700 food generation and preparing organizations (Kundu, 2017).

Literature Review

Globalisation provides a great opportunity for entrepreneurial ventures to expand the businesses internationally. With the help of local governments, large corporations, and international organizations, entrepreneurial enterprises can confront the challenges posed by globalisation and economic liberalisation, to improve its competitiveness in the global market, and better serve the global consumers (Kumar, 2005).

Think Global, Act Local: India, China, Korea, Taiwan South Korea & Pakistan: A study on a Bangladeshi leading fashion brand- Yellow and its international marketing process showed demographics and psychographic variables (Ahmed, 2016). The term Glocalisation concept implies 'Think global, act local' which had been developed by Japanese business practices and plays a crucial role to enter the Indian markets (Fernandes, 2013). Brands like Mcdonald's, Samsung (Lowell & Bharat 2012) and Coca-cola have maintained its sustainability and competitiveness in the global

arena through localisationstratagies. Mcdonald's had even introduced a dollar menu. They have adapted to the local conditions and cultural differences (Mujtaba, 2007). A study revealed that the product localization plays a crucial role in McDonalds's success in maintaining its competitive position in Indian market (Panwar & Patra, 2017) and for Korea, a mature woman dressed traditionally (Michael, 2012). Coca-Cola they are following the Integrated Stand approach (Vrontis, 2003) and so as the leveraged business by Unilever/Hindustan Lever (HILL) *for fair and lovely* (Shevde, 2008). Besides, the strategic changes, brands like Starbucks had to go for an International Joint Venture to enter the Korean market and gain acceptability (Madadoglu, 2013; Ferman, 2019). A study found that Carrefour localized its strategies to suit unique conditions in Taiwan such as Chinese culture, language, local competition and government policy (Chinomona & Sibanda, 2012). Kellogg's understood the need to appreciate cultural differences. Its new strategy did not try to replace India's breakfast habits, but localization campaign was done showing and promoting Indian culture (Jha, 2016). Customization rather than globalization is the key to the company's strategy in emerging markets (Garimella, 2018; Metinetal, 2015).

Contrast to the localisation, some brands considered standardisation: Corporations need to prepare competitive analysis with a global understanding and global scale (Haron, 2016) even for Sony Ericson (Azuayi, 2016) that follows standardization strategy in international markets. LG Electronics carried out differentiated and mixed brand advertising strategies for similar products in the U.K. and Russia (Matveev & Nurgaleeva 2012; Matveev & Nurgaleeva 2012). Apple is focused on product quality; uniqueness with high price through standardization strategy (Doole & Lowe, 2008). However, A study constructed four current debates within the global strategy field: (1) cultural vs institutional distance; (2) global vs regional geographic diversification; (3) convergence vs divergence in corporate governance, and (4) domestic vs overseas corporate social responsibility (CSR). There is an underlying theme that connects these four debates: the institution-based view of global strategy which can make with diverse range of cutting-edge debates and topics in global strategy (Peng & Lundan, 2008).

Importance of International Joint Venture, Acquisition, Merger & Export as a mode of entry: Concerning the market dimension, high level of dedication seems to require investments in distribution/sales FDIs or mergers with companies with high dedication (Testa, 2010). Large brands like Toyota even did a strategic joint venture with GM to spread to Europe, North America and other regions keeping its Japanese engineering skills and ideas to the central point but this has led them to build high quality vehicles and maintain customer trust (Ichijo & Kohlbacher, 2007). The solution for globally operating companies – including Toyota – has, in the past, tended to be to build manufacturing facilities in developing markets (such as Asian regions) mainly owing to its cheap labour costs. However, in developing and producing cars for these regions, Toyota used to stay reliant on Japanese designers and engineers, rather than exploiting local talent (Ichijo & Kohlbacher, 2007). Brandslike Starbucks also considered joint ventureship with Shinsegae Corporation of Korea and recorded an annual growth of 20-25%. Both the companies are engaged with corporate social responsibilities and provide well-being to the society thereby acceptable by the Korean market (Madadoglu, 2013). Successful brands like Netflix almost conquered the whole world, after establishing its feet in China as well, in collaboration with the service provider Baidu (Mandal, 2017). Chinese enterprises are drawn to politically risky investment locations and invest abroad primarily for natural resource and strategic asset seeking considerations (Alon, 2018). On the contrary, Tesco originally did not envisage divestment or de-internationalization as part of the original internationalization strategy process in either the acquisition of Three Guys in Ireland or Catteau in France (Palmar, 2004).

The success and challenges in the online and social media platform: The importance of Regional Innovation System (RIS) as an analytical approach and tool for policy prescription is illustrated by two Asian high-tech cases, namely Bangalore's IT RIS in India and Shanghai's high-tech RIS in China (Vang & Asheim, 2006). Brands like Ebayhas a focused targeting despite the mass

population as its target market. These brands do a thorough analysis of its direct and indirect competitors but provide the most focus on customer satisfaction (Mishra, 2010). Food delivery mobile apps like Foodpanda even considered for a thorough analysis of its competitiors in the Indian market but focus has always been the timeliness ansd customer satisfaction (Ansari, 2016). Companies like Dunkin' Donuts used its brand name, logo, colors, and images of its products on Instagram to create a strong brand presence. (Lavoie, 2015). Likewise, LinkedIn, help students differentiate and market themselves and grow their networks, which is a must in today's competitive job environment (Cooper & Naatus, 2014).

Local capabilities into leading Global system: A study showed that the Huawei determines the complicated ways in which Europe has so far been affected by Chinese high-tech outward FDI as the region has been integrated in the company's global production network (Drahokoupil, 2017). Bangladesh RMG export status with a thorough increased export (Hossain, 2019) - Bangladesh Garments is concentrated on two markets: the European Union EU (28), and the United States of America (USA) (Hossain, 2019).

Walmart has successfully transformed the brand from a regional retail to a leading global and US mass merchandising / discount retailer. The key to success has been the core competences in Information technology and distribution (Banerjee, 2015). Additionally, the Innovation Mill (IM) is an initiative, which has been established in collaboration predominantly into Nokia Corporation (Mokter, 2012). Also, tobacco companies like Japan Tobacco Incorporated's global expansion and this has been accompanied by the development and diversification into new smoking technologies (MacKenzie, Eckhardt, and Prastyani, 2017).

CSR engagement: Companies like Starbucks corporation and its ventured partner Shinsegae Corporation of Korea engaged with corporate social responsibilities and provide wellbeing to the society thereby acceptable by the Korean market (Madadoglu, 2013). Similarly, Pepsico participates in the healthy food market providing value to the society however in this process there were many challenges being faced by them (Aguirre-Mar 2013).

Theoretical aspects come into practice- customer focus, competitor analysis and external study: Companies like Walmart stores Inc. have actively considered the PESTEL and SWOT analysis besides its business generic strategy as the broad cost-leadership in the market (Banerjee, 2015). Moreover, luxury brands like BMW even does a thorough analysis of its competitors based on Porters, PESTEL analysis and stakeholder mapping (Eileen, 2015). The Renault- Nissan Alliance has established partnerships with other automakers (Shiga, 2012). In relation to Ansoff, Coca-Cola used the Market Penetration Strategy and become established in its home market by increasing market share and product usage (Vrontis & Sharp, 2003). One of the other operational (corporate) strategies of Emirates is called "be the first to introduce new products." Emirates have also implemented another operational strategy (corporate) called "best customer service provider" (Al-Aali, 2011). Thus, American and European full-service airlines have lost a significant proportion of their passengers to low cost carriers, the experience now being repeated in the domestic markets of Asia. Low cost carriers have reshaped the traditional airline business model and have significantly changed the competitive dynamics of the industry. (O'Connell & Williams, 2005). Luxury brands like Giorgio Armani's brand have been able to maintain its brand image and have been consistently successful (Kern et al., 2017). Brand extensions should be done only after a brand has firmly positioned itself in the mind of the consumer keeping its core theme or DNA intact (Kern et al., 2017).

Brands like Zomato gives ROI to the advertiser/ restaurant owner (Sethi, 2017) in India. Domino's Pizza India Ltd is now today a market leader with its 321 stores just focusing on customer relationship manegement and its direct marketing efforts (Vimi & Shobit, 2012). An exploratory study was conducted to examine the impact of product quality and service quality on attitude- and behavior-based brand loyalty for quick-service restaurants (Reich, 2005). Clothing industry, the brand H&M has constructed its sustainable supply chain in developing eco-materials, providing safety training, monitoring sustainable manufacturing, reducing carbon emission in distribution, and

promoting eco-fashion (Shen, 2014). Bangladeshi brand Yellow has also considered going international by taking the opportunity of cheap labour cost and easy access to raw materials (Ahmed, 2016). Retailing is likely to require special considerations if we are to be able to develop a theoretical as well as a practical understanding of knowledge and knowledge sharing in the internationalization process (Jonsson, Elg 2006). IKEA stores in response to market-based learning, while higher-level features (fundamental values, vision, etc.) are replicated in a uniform manner across stores, and change only very slowly (if at all) in response to learning ("flexible replication") (Jonsson & Foss, 2011).

The literature review has been constructed based on various theoritical issues that came into practice by several international brands from different industries, also including the economic automobile sector. The gap found between the literature review and the research paper is how perception is driving the consumer behavior about global product purchases apart from some known theoritical aspects only.

Research questions

1. why consumers prefer global brands over local brands?
2. whether patriotism factor influences a local product purchase;
3. whether quality impovements can enable local companies to charge a higher price;
4. whether global products' quality and its high price is positively related; and
5. which areas can local brands concentrate on in order to meet International standards?

Hypothesis

Ho- Global products are not higher in quality than the local products so consumers do not tend to pay a premium price for that.
Ha- Global products are higher in quality than the local products so consumers pay a premium price for that.
Ho - Consumers will not pay a premium price for a local product even if they raise the quality of their products.
Ha - Consumers will pay a premium price for a local product over a global product, if there are quality improvements.

Data Collection and Research Methodology

This study was conducted to assess the consumer preference for global products and brands against similar local products or brands. The study also tries to find out the specific underlying reasons behind them choosing global products and brands over local ones.

Data Collection: The primary data collection technique for this research is 'consumer survey'. Diverse range of products and brands are used as reference points for consumers to answer the questionnaire. There were almost 80 types of different products and brands from both local and global calibers that were considered but the questionnaire was conducted based on the most standardized form to understand why a consumer chooses to purchase a global brand.

The sample size for the research questionnaire and data collection is 500 respondents. The respondents were from shopping malls, super shops, universitites and colleges as it represents many consumers of food and beverage products. Some of the respondents were also considered from social media. Almost all the respondents were between 18 to 32 years of age and of them almost more than 60% were men. This is because non-probability sampling techniques were used for choosing the participants of the survey questionnaire. Snowballing and random sampling method was used because of the availability and unwillingness of the appropriate population to incorporate in the sample size. The hypotheses are tested by analyzing the data acquired from survey questionnaires through three steps. Firstly, at general level, each of the questions pertaining to the hypotheses is seen through a graphical representation which gives us a general understanding of the outcome. Then the relationships between the data are run through regression, covariance and correlation to

test the relationship statistically between the variables and finally conclusion was drawn through the ANOVA table and analysis.

Findings

The survey has been conducted on 500 respondents which revealed that the consumers choose the global products over the local products due to Quality (95.4%), its Brand Image (93.4%) and the effective brand communications (79.4%) respectively. It is rational to believe that the cost will rise when local products are improved in a way to meet the International standards therefore, prices will rise as well. However, the study also revealed that only 28% on average of the general consumers are ready to pay a premium price even if the local products raise its quality. 64% on average of the respondents believe about the role of Patriotism affect the purchase decision hence they purchase a local product over a global product.

The general people believe that increasing the Quality of the local products (38.8%) and having product variety (31.6%) can help them compete in the global arena. Interestingly, some consumers believe that unfair or fair pricing of the local products is not an issue in considering a purchase decision.

Summary output

Regression Statistics	
Multiple R	0.05278896
R Square	0.002786674
Adjusted R Square	0.000776164
Standard Error	1.803192875
Observations	498

Since R square is 0.002, which is only 0.2%, this means that the model does not explain all the variability of the response data around its mean.

ANOVA

	df	SS	MS	F	Significance F
Regression	1	4.506757	4.506757	1.386053	0.239637418
Residual	496	1612.746	3.251505		
Total	497	1617.253			

ANOVA run analysis and regression analysis

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1.347441643	0.671728	2.005932	0.045406	0.027657538	2.667225747	0.027658	2.667226
X Variable 1	0.164205822	0.139476	1.177307	0.239637	-0.109830275	0.438241919	-0.10983	0.438242

The p-values are less than 1 indicating weak evidence against the Null-Hypothesis. Moreover, the T-value in this case is positive, which means that the sample mean is less than the hypothesized mean. Therefore, there are significant relevant differences among the variables. Quality of the global product and Premium price to pay for it has a positive co-relationship between them is (5.3%). Also, the variables represent a positive co-variance (5.5%), it means that both are positively related to each other in case of a global brand purchase.

Result Summary

The analysis and survey results prove that global products are preferred due to its Quality and how people are ready to pay a premium price for that as they are positively related. Although, only one of the hypotheses is proved and there is a strong relationship between Quality and Perception of the consumers who are ready to pay higher price for global products but is not same in the case of local products. The other hypothesis is therefore rejected, because even if there are significant product improvements in the local product, consumers will still not pay a premium price for that due to perceptual brand differences such as Emirates who has been known best for its excellent customer services (Al-Aali, 2011) and luxury brands like Giorgio Armani for its consistent brand image (Kern et al., 2017).

Limitations and direction for future research

The number of respondents could be higher for a significant revelation regarding the concept. The future research scope is higher if further brands and its management could be interrogated related to its strategies and positioning in the global platform.

Conclusion

The local products can improve its quality by setting up a benchmark of the global products; choose an effective way of communicating with the consumers with adapting various strategies, which will drive the customers' attention towards the local products. Based on the survey results, it can be stated that the consumers believe if the local companies focus on to develop and improve its quality and incorporate more product variations, then the local products can meet an international standard and gain more consumers.

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Effect of entrepreneurship and small business on Nigeria's economy

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Keywords
Entrepreneurship, small businesses, Nigeria

Abstract
The objective of this research is to ascertain the effect of entrepreneurship and small business on Nigeria's economy. The study focused on entrepreneurs and small business owners in Benue State, Nigeria. The study adopted a cross-sectional survey design. A sample size of 110 respondents was used, determined by convenience sampling. A structured questionnaire was the instrument for data collection. The study found out that entrepreneurship and small businesses have a positive effect on Nigeria's economy. The study recommends that government at all levels in Nigeria should provide a conducive environment for businesses to strive.

1. Introduction

It is no secret that entrepreneurs and small business owners have received greater recognition as drivers of economic growth. Studies have shown that long-term economic growth and prosperity require participation from entrepreneurs and small business (Domingo, 2017; Forsman, 2011; McKeever, Anderson & Jack 2014). Entrepreneurship leads to the creation of new businesses and drives economic prosperity. Entrepreneurship is thus a driving force within the economy, particularly because of the entrepreneurs' innovative nature (Domingo, 2017).

Entrepreneurship is as old as man. The point at which man stopped satisfying only his needs and accommodated the needs of others marked the real origin of entrepreneurship. Its development has been gradually corresponding with the development of the human race Ayegba (2016). In the beginning, entrepreneurship started when people produced more products than they needed, as such, they had to exchange these surpluses. For instance, if a blacksmith produced more hoes than he needed, he exchanges the surplus he had with what he had not but needed; maybe he needed some yams or goat etc., he would look for someone who needed his products to exchange with (Adebayo & Kolawole, 2013). By this way, producers came to realize that they can concentrate in their areas of production to produce more and then exchange with what they needed. So, through this exchange of products, entrepreneurship started.

Small scale businesses play important and crucial roles in the industrial development of any country (Ahmed, 2006). According to Ojo (2009), small-scale businesses have a better prospect for developing domestic economy through the generation of goods and services that propels the economy of Nigeria. The need to focus on small scale industry became important in Nigeria because it was a means of ensuring self-independence, job creation, and import substitution, effective and efficient utilization of local raw materials (Ojo, 2009). Small businesses in Nigeria contribute to employment and is a path to entrepreneurship. The focus of small businesses has shifted from providing only social goods but as a vehicle to entrepreneurship (Thurik & Wennekers, 2004). Therefore, it serves as a source of job creation and economic growth. Hence, the reason policy makers in Nigeria pay attention to entrepreneurship and small businesses.

1.2 Research Objective

The objective of this study is to ascertain the effect of entrepreneurship and small business on the Nigerian economy.

1.3 Research Hypothesis

Ho$_1$: Entrepreneurship and small businesses have no effect on the Nigerian economy.

2. Concept of Entrepreneurship and Small Business

Entrepreneurship is an essential variable in any economy growth and development. Entrepreneurship is the willingness and ability to identify business opportunities through creativity and innovation and establishing necessary machinery to run business enterprise successfully. Adidu and Olannye (cited in Nzewi, Onwuka & Onyesom, 2017) stated that entrepreneurship can be described as a process which involves the transformation of innovative and creative ideas into profitable activities especially outside an existing organization. Entrepreneurship has gained global recognition in facilitating employment generation and economic transformation. It is a veritable tool for poverty eradication and reduction of social vices. The concept of entrepreneurship has been associated with several activities concerned with the establishment and operation of business enterprise. These activities include but not limited to identification of investment opportunities; decision-making regarding available opportunities to exploit; promoting and establishing business enterprises; aggregation of the scarce resources for production and distribution of goods and services; organization and management of human and material resources for the attainment of the objectives of the enterprise; risk bearing and innovation (Onyeom & Uwaifo, 2013). The effective performance of the above activities is critical to the birth, survival, and growth of the business enterprise.

Entrepreneurship contributes greatly to the economic wellbeing of a given economy. This can be seen through:

Create jobs through the formation of new enterprises, especially small-scale businesses.

Raise productivity through various forms of innovation.

Facilitate transfer of technology or the adaptation of existing ones.

Harness resources that might otherwise remain idle and put them into productive use.

Stimulate growth in those sectors which supply it with inputs.

Reinvigorate small scale businesses and also public enterprises.

Encourage and sustain economy dynamism that enables an economy to adjust independence and status for themselves in society.

Oborah (2003) averred that entrepreneurship is a veritable employment alternative to wage employment and panacea to graduate unemployment. According to Nzewi et al (2017), entrepreneurship in Nigeria is characterized by small scale enterprises in all sphere of the economy ranging from agro-based to service industry and that it constitutes about 97 percent of all businesses in Nigeria. Entrepreneurship goes through stages, namely; conception of business idea, evaluating business opportunities, initial starting of the business, nurturing to the business to grow to maturity, maintaining stability of the business growth, expansion of the business and improving standard/quality to business decline. This process is exhilarating and encouraging to the entrepreneurial minds.

The majority of business enterprises in Nigeria like most other countries consist of small and medium businesses. Small business constitutes a vital element in the business life of any country such as Nigeria. Nigeria small business enterprises are still predominantly in the traditional state with only a few in the better-organised stage. Nzewi et al (2017) brought out four broad classification of Small and Medium Enterprises; (a) Micro/Cottage Enterprises, (b) Small Scale Industry/Enterprises and (c) Medium Scale Industry/Enterprises and (d) Large Scale/Companies. The first term refers to an industry/enterprise with a labour size of not more than 10 workers or total cost of not more thanN1.5 million, including Working Capital but excluding the cost of land. The second class is an industry or enterprise with workers' strength of between 11 and 100 or a total cost of not more than N50 million, including the cost of land. The Medium Scale Industry refers to an industry with a labour size of between 101-300 workers or a total cost of over N50 million, but not

more than N200 million including working capital, but excluding the cost of land. The fourth term refers to an industry or enterprise with a labour size of over 300 workers or a total cost of over N200 million. The Development of any enterprise whether (micro, small, medium or large) is a necessity that calls for concern by any entrepreneur. It involves the size of the business which consists of many factors such as market and technology (Durowoju, 2014). If the market is small, only small or micro economic activities will be viable.

This is because the market size itself is also determined by the level of real income per capital and the size of population, which together determine the actual number of buyers. Small and Medium Enterprises (SMEs) involved in manufacturing industry to produce a variety of goods that can be grouped into two categories, viz-a-viz, consumer and industrial goods.

Despite the strong competition by the large enterprises, SMEs are able to survive because their products are differentiated by nature or acquirement thereby creating niche for themselves e. g handicrafts which are outside the competitive area of items that are similar but more sophisticated and produced by large enterprises with machines. As a result, SMEs have a better chance to survive and hence to grow and develop, whereas they would be out priced in the market if they tried to compete with large enterprises by making exactly the same products when the economic scale of output prescribes large enterprises accessing modern technologies.

2.2. Distinction between Entrepreneurship and Small Business

Small business owners are not dominant in their field, and usually do not engage in many new or innovative practices. They may never grow large, and the owner may prefer a more stable and less aggressive approach to running the business. Since small firms include those purchased as ongoing business as well as franchises, small business owners can be viewed as managers of small businesses.

On the other hand, entrepreneurial ventures, according to Hodgets & Kuratko (2002), are those for which the entrepreneur's principal objectives are profitability and growth. Entrepreneurs and their financial backers are usually seeking rapid growth and immediate profits. They even may seek a sell-out of their business with large capital gains. Thus, entrepreneurs may be viewed as having a different perspective from small business owners in the actual development of their firm. Therefore, Richard (2000) and many other authors defines entrepreneurship, in the traditional way, as the process of initiating a business venture, organising the necessary resources, and assuming the associated risk and reward. Venkataraman (1997) argued that entrepreneurship involves two phenomena: 1) the presence of profitable opportunities and 2) the presence of enterprising individuals.

2.3. Contributions of Small-Scale Businesses to the Economy

Small scale businesses contribution greatly to the economic development of Nigeria. According to Agbonifo (2009), Nzewi et al (2017), and Ayegba (2016) include:
- They provide an effective means of mitigating rural urban migration and resource utilization through their widespread,
- Source of employment to Nigeria populace,
- They also retain a competitive advantage over larger enterprises by serving dispersed local markets and produce various goods with low scale economies for niche markets,
- Provision of an effective means of stimulating indigenous entrepreneurship and producing intermediate products for use in large scale enterprises.

2.4. Major challenges confronting Entrepreneurs and Small Business in Nigeria

The major challenges faced by entrepreneurs and small business owner include lack of adequate funding, Poor record keeping and information management, Inability to distinguish business capital from personal money, lack of crucial infrastructural facilities and Lack of proper business and management skills/knowledge (Domingo, 2017; Toyin , Issa & Chima, 2014; Ishola, Olaleye, Ajayi & Femi, 2013).

(a) Lack of adequate funding

Inspite of the tremendous benefits of small businesses on economy development, improvement of local technology and development of indigenous entrepreneurship and among others, small businesses in Nigeria have recorded a gross under performance over the years and this has undermined its contribution to economic growth and development. Small business owners across the country attributed this situation to poor funding of small businesses. And this comes in the area of securing adequate fund to start-up the business, and lack of funding to sustain and upgrade small businesses.

(b) Poor record keeping and information management

Poor record keeping and lack of information management are very pronounced among Nigerian small businesses. These phenomena undoubtedly pose many challenges to the success of small businesses in Nigeria.

(c) Inability to distinguish business capital from personal money

Despite the fact that a vast majority of small businesses in Nigeria do not have proper accounting system which is threatening their business performance and survival, inability to distinguish working capital from money meant for personal use is another problem faced by owners of small businesses in Nigeria.

(d) Lack of crucial infrastructural facilities

Also, another glaring challenge been faced by small businesses in Nigeria is lack of infrastructural facilities. Provision of Infrastructural facility, according to Boter and Lundstrom (2005) can make or break entrepreneurs. This means, in other words, that availability of infrastructural facilities can determine the success or the failure of small businesses. In Nigeria, these problems have been around for decades and still linger on. Basic facilities such as uninterrupted electric supply, good road network, good water supply, and efficient waste disposal facilities, and other essential infrastructures needed to support society and business operations are lacking.

3. Research Methodology

The objective of this research is to ascertain the effect of entrepreneurship and small business on the Nigerian Economy. The study focused on entrepreneurs and owners of small businesses in Benue State, Nigeria. The study adopted a cross- sectional survey design. A sample size of 110 respondents was used, determined by convenience sampling. A structured questionnaire was the instrument for data collection. The questionnaire was personally administered to entrepreneurs and owners of small businesses. Out of the 110 questionnaires issued, 100 questionnaires were properly filled and were used, which translates to 91 per cent response rate.

3.2 Validity and Reliability of Instrument

Validity is the ability of a measuring instrument to produce reliable results as well as measure what it claims to measure (Akpa, 2011). A valid measure is one that produces true results that agree with the true situation and prevailing conditions of the environment it purports to study.

Reliability of scale indicates the stability and consistency with which the instrument measures the concept and helps to assess the goodness of a measure (Sekaran, 2000). To test the reliability of the instrument, the Cronbach's alpha test was conducted with the data collected

Table 3.1: Reliability Statistics

Variable	Anchor	No. of Items	Cronbach Alpha
Entrepreneurship and Small business	5 Points	3	0.785
Economic Growth	5 points	3	0.753

Source: SPSS Output

Table 3.1 shows different Cronbach's Alpha for the 2 constructs of the questionnaire (1 independent variable and 1 dependent variable). Entrepreneurship and small business have 0.785; while economic growth has 0.753. Overall, all the items in each variable in the questionnaire have a good reliability. This is because all Cronbach alpha values are in excess of minimum value of the 0.60 recommended by Cronbach and Nunnally (in Adepoju & Suraju, 2012).

4. Analysis

Descriptive statistics and multiple regression were used to check the effect of entrepreneurship and small business on economic growth.

Table 4.1. Descriptive Statistics

	N	Minimum	Maximum	Mean		Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Std. Error	Statistic	Std. Error
Entrepreneurship and small business	435	1.00	5.00	3.32	.04318	.90	-.452	.117	.062	.234
Economic growth	435	1.00	5.00	3.57	.04896	1.02	-.646	.117	-.246	.234

Source: SPSS Output

The statistics in Table 4.1 also shows that the mean of value for Entrepreneurship and small business was 3.32 with a standard deviation 0.90. This shows that the level of dispersion is wide, while for economic growth, the mean value is 3.57 with the standard deviation as 1.02.

Table 4.2. Coefficients

Model	Unstandardized ients		Standardized ients			95% l for B	Confidence
	B	Std. Error	Beta	T	Sig.	Lower	Upper
(Constant)	-.291	.234		-1.244	.214	-.750	.169
Entrepreneurship and usiness	.340	.045	.300	7.518	.000	.251	.429

a. Dependent Variable: Economic growth

Source: SPSS Output

4.2 Hypothesis Test

Ho$_1$: Entrepreneurship and small businesses have no effect on the Nigerian economy

Table 4.2 displays the *t*-values and probability value for entrepreneurship and small businesses. Given that the critical value of *t* is ±1.96 and the calculated value of *t* = 7.518, *p* < 0.01 the study rejects the null hypothesis and concludes that entrepreneurship and small businesses has effect on the Nigerian economy.

5. Conclusion

Entrepreneurship and small business inspite of its challenges which are lack of adequate funding, poor record keeping and information management, inability to distinguish business capital from personal money, lack of crucial infrastructural facilities and lack of proper business and management skills/knowledge; it still has a positive effect on economic growth. Such as job creation, raise productivity through various forms of innovation, facilitate transfer of technology or the adaptation of existing ones, harnesses resources that might otherwise remain idle and put them into productive use, and stimulate growth in those sectors which supply it with inputs.

6. Recommendation

This paper recommends that government should provide an enabling environment for entrepreneurs and small business owners to strive, through the provision adequate funding, crucial

infrastructural facilities, organizing training programs for entrepreneurs and small business owners, patronizing entrepreneurs and small business owners, among others.

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Does halal food export follow the gravity trade theory? The Malaysian perspective

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Trade, Gravity Model, Halal Food, Halal market, Malaysia

Abstract
Purpose of the research: Despite empirical evidence in support of the gravity theory of trade, the applicability of the theory in Halal food trade appears confusing and inconclusive in the adolescent Halal literature. This study aims to further investigate this issue when analysing the Halal export opportunities for Malaysia.

Design/methodology: This study examines Malaysia's top 10 exportable food commodities with the respective Key Halal markets for the period of 2000-2017 by using the panel data analysis approach including the Hausman-Taylor model.

Results/findings: This study finds that the application of the gravity theory of trade within the Halal context provides mixed results. Being consistent to the theory, economic size of both exporter and the trading partners positively influences trade; however, as theoretically predicted, distance between trading partners does not always appear as barrier for Halal food trade. In addition, the study identifies the food commodities which displays market potential within the Key Halal markets. This will allow Malaysia to strategically diversify its exports in food commodities to the Halal markets. For example, given a market potential for Oil of Palm, Food Preparations, Oil of Palm Kernel and Cocoa Powder and Cake, Malaysia could consider diversifying its exports in these products to the Key Halal markets.

Practical implication and conclusion: This study suggests that the application of gravity trade theory cannot be generalized for Halal food trade. It rather appears as commodity specific. Hence careful commodity selection is crucial for Halal food export diversification.

Introduction
Malaysia is described as an export dependent nation due to its heavy reliance on exports in fuelling the economy. 71% of Malaysia's GDP was attributed to its export activity as of 2017 (World Bank, 2019). Despite the benefits of internalisation such as improved productivity and innovativeness (as in Krugman, 1985), Malaysia's overreliance on its export sector makes it vulnerable to potential adverse economic shocks affecting its trading partners. For instance, adverse consumer sentiments during the 2008 US Subprime Mortgage Crisis led to a lower demand for Malaysia's exportable goods, which in turn resulted in the economic slowdown of Malaysia's economy (Kabir, Salim & Bloch, 2018). A 0.1% GDP growth was recorded during the fourth quarter of 2008 compared to the average GDP growth of 5.9% during the first nine months of 2008 (Lim & Goh, 2010). Given the risks inherent in international trade, Malaysia could minimize the risks by diversifying its portfolio of export destinations as opposed to sole reliance on its traditional trading partners.

Given Malaysia's exemplary Halal standards as mentioned by the Codex Alimentarius Commission (responsible for the regulation of food preparation globally) and the lucrativeness of the global Halal market, Malaysia could consider diversifying its exportable food commodities to Key Halal Markets (Detail on the Key Halal Markets is presented in Appendix A) (Kabir, Shams & Lawrey, 2018). With the growing Muslim population and their increased purchasing power, the global Halal market is currently valued at US$ 3 trillion and projected to grow to approximately US$ 8 trillion by 2030 (Husin, 2018). The Halal market is very broad and includes a wide range of goods such as food and beverages, personal care products, cosmetics, as well as services covering restaurants, hotels and banking and finance (Mazlan & Hamzah, 2015). However, the Halal food market is most promising as a recent estimate suggests that the global Halal food and beverage market size alone was US$ 1,173 billion (16.6% of the global food and beverage industry) in 2015 and is expected to be worth US$1,914 billion by 2021 (18.3% of the global food and beverage industry) (Thomson and Reuter, 2018).

Successful accession into these markets require the realignment of Malaysia's trade policies to suit the trading mechanism underlying trade with Halal markets. Being known as the workhorse of international trade, the gravity theory of trade posits that trade among country pairs are proportionately enhanced by their economic size but is inversely related to the distance separating them. The most common finding in studies adopting the gravity framework is the adverse distance effect on trade (Frankel, 1997; Disdier & Head, 2008; Berthelon & Freund, 2008). Larger the distance separating trading pairs apart, higher the transportation costs incurred thus suppressing trade relations as exportable goods become more expensive. However, past studies assessing Malaysia's trade relations with various Halal markets either documented a positive distance effect or an insignificant distance effect on trade (Abidin, Bakar & Sahlan, 2013; Masron, Nik Azman & Hassan, 2014; Mazlan & Hamzah, 2015). A common explanation for such inconsistency is the inelastic demand for Halal food commodities by consumers thus indicating their willingness in paying a premium price for Halal goods (Abidin et. al., 2013; Masron et. al., 2014; Mazlan & Hamzah, 2015). In other words, the institutional effect of Islam on its believers to consume only Halal food items make economic agents within Halal markets more behavioural thus explaining their willingness to pay a premium in ensuring the Halal status of their purchase.

Considering the differing trading mechanism underlying trade with Halal markets and the limited number of studies contributed towards this line of literature, this study aims at investigating whether the conventional trade theory such as gravity theory is compatible with Halal trade. We do this by analysing Malaysian exports of 10 food commodities from 2000 to 2017 to the Key Halal markets thus covering 80% of Malaysia's food export. The study has several findings. First, standard gravity model cannot equally explain the trade pattern of all 10 Halal food commodities. Instead, designing commodity specific augment gravity model would better explain Malaysia's export potential for Halal food industry, implying that Malaysia's Halal export policy might have to be commodity specific. Second, demand from the Muslim community of the trading partners show significant positive influence on trade for three out of ten commodities. Hence, Malaysia may have high demand only for selected Halal food commodities. Third, except for Oil of Palm, Food Preparation and Pastry, the coefficients for distance between the trading partners appear as positive. This result drift away from a basic assumption of gravity trade theory that trade is inversely proportional to the distance, i.e., the cost involved in trade between the trading partners. Thus, the study supports that of Abidin et. al. (2013), Masron et. al. (2014) and Mazlan & Hamzah (2015) that demand inelasticity of Halal food may have important role in Halal trade policy. However, previous studies covered either OIC members or Middle east countries, while the current study covers the Key Halal market which includes countries from Middle east, Asia, Africa and Europe. Overall, the study suggests that the conventional trade theories cannot be generalized for Halal food exports, rather be commodity specific. Thus, Halal food export requires careful commodities selection as well as commodity specific policy focus.

The paper is organized as follows. Section 2 explains the theoretical framework for the study, followed by the details for variables and estimation techniques in Section 3. Section 4 explains the results, and the last section concludes the paper.

The Theoretical Framework for Halal Trade

Earlier studies such as Tinbergen (1962) and Poyhonen (1963) employed the gravity model of trade with a high predictive power of the gravity specification. The model has been widely applied within trade literature in examining the impacts of various trade enhancing and impeding factors. In particular, much research has been directed at examining the adverse effects of transportation costs (Frankel, 1997; Berthelon & Freund, 2008; Disdier & Head, 2008; Hornok & Koren, 2015), administrative barriers to trade (Djankov, Freund & Pham, 2010; Hornok & Koren, 2015), cultural and linguistic dissimilarity on trade (Grossman, 1998; Felbermayr & Toubal, 2010; Ku & Zussman, 2010; Lohmann, 2011; Oh, Selmier & Lien, 2011; Carrere & Masood, 2018), and the trade promoting effects such as establishing a regional trade agreement (Ghosh & Yamarik, 2004; Carrere, 2006; Yang & Martinez-Zarzoso, 2014; Barbalet, Greenville, Crook, Gretton, & Breunig, 2015; Bhattacharyya & Mandal, 2016) and economic size of trading pairs.

Despite the wide employment and support for the gravity framework, the limited application of the gravity specification in Halal trade literature makes the applicability of the gravity framework within the Halal context questionable. Among few, Yunus & Ismail (2009) highlighted the trade enhancing effect of economic size and FDI in promoting Malaysia-OIC trade relations. On the other hand, factors such as exchange rate volatility and distance between trading pairs suppress trade between Malaysia and OIC countries. Additionally, Masron et. al. (2014) concluded that the population of the importing country and size of both the exporting and importing country enhances Malaysia's exports to MEACs (Middle Eastern Asian Countries) whereas distance between trading pairs discourages trade. Furthermore, Abidin et. al. (2013) found that the real exchange rate of both Malaysia and OIC member countries significantly and positively effects Malaysia-OIC trade whereas, the per-capita GDP of Malaysia and the consumer price index of OIC member countries negatively effects Malaysia-OIC trade. Mazlan and Hamzah (2015) as well supported the applicability of the gravity framework by showing a positive association between Malaysia's halal exports and the GDP and population size of the importing country. However, Abidin et. al. (2013) observed a positive distance effect on trade with a 10.73% increase in trade with each kilometre increase in distance between Malaysia and OIC member countries. Similarly, Masron et. al. (2014) observed a diversion from the gravity specification due to the insignificant distance effect on trade between Malaysia and MEACs.

Diversions from the gravity framework in Halal trade is driven partly by consumer behaviour. Consumer-based brand equity specifies that the product attributes of a product guides consumer preference of a brand over the other (Butt, Rose, Wilkins & Haq, 2017). However, given the onset of religious identity, Butt et. al. (2017) suggest that consumers differentiate products based on psychological and behavioural characteristics as opposed to a product's attribute. For instance, despite a Cadbury bar being identically the same globally, consumers may prefer a Cadbury bar from Malaysia for its Halal certification. Thus, the determinants of consumer-based halal brand equity (CBHBE) measures the propensity for a consumer to opt for a halal certified brand over its non-halal counterpart. Butt et. al. (2017) claim that self-expressive religious benefits (SERB) of Muslims is the strongest determinant of CBHBE. That is, consumers in consuming halal goods may feel a sense of being rewarded as they have successfully hindered themselves from consuming prohibited goods. Hence, the positive effect of Halal certification on consumer behaviour occurs due to the institutional effects of Islam on its believers (Mazlan & Hamzah, 2015; Masron et. al., 2014; Butt et. al., 2017). Thus, agents within Halal markets seem to be more behavioural as opposed to depicting cost saving behaviour as posited by the gravity specification. The institutional effect of religion

dictates the consumption patterns of consumers (Cosgel & Minklers, 2004). This therefore may explain the diversions from the gravity specification as evidenced by Abidin et. al. (2013) and Masron et. al. (2014).

Considering such behavioural difference, one would expect a different trading mechanism underlying trade with Halal markets as opposed to trade with conventional markets. We test this difference in the Gravity framework. Following the literature discussed in this section, the basic framework of this study is as follows:

$$trade_{ij} = gdp_i \, gdp_j \left(t_{ij}\right)^{1-\sigma} \; \ldots \ldots \ldots \; (1)$$

Here, gdp_i is the GDP of country i, gdp_j is the GDP of country j, and t_{ij} is the bilateral trade cost factor. Further elaboration of the model is discussed in the next section.

Description of Model and the Estimation Technique

Considering the discussion of the above section on possible diversification of Halal trade behaviour from the conventional trade model, the augmented gravity model used in this study is as follows:

$$\ln exports_{ijt} = \beta_0 + \beta_1 \ln gdp_{it} + \beta_2 \ln gdp_{jt} + \beta_3 \ln muspo\,p_j + \beta_4 \ln dist_{ij} + \beta_5 border_{ij} +$$
$$\beta_6 comlan\,g_{ij} + \beta_7 coltie\,s_{ij} + \beta_8 \, rta_{ijt} + \alpha_{it} + \alpha_{jt} + \varepsilon_{ijt}$$
$$\ldots \ldots \ldots \; (2)$$

Here, $exports_{ijt}$ is the exports from exporting country i to the respective Key Halal markets (country j); $\ln gdp_{it}$ and $\ln gdp_{jt}$ represents the production capacity of the exporting country and potential demand by Muslim consumers from the importing country respectively; $\ln muspo\,p_{jt}$ refers to the market size (number of potential consumers) in the importing country; $\ln dist_{ij}$ represents the distance between the exporting and importing country; $border_{ij}$ is a dummy variable which takes a value of 1 if country pairs share a common border, 0 otherwise; $comlang_{ij}$ is a dummy variable which takes a value of 1 for country pairs sharing the same official language, 0 otherwise; $coltie\,s_{ij}$ is a dummy variable which takes a value of 1 for country pairs who were ever in a colonial relationship, 0 otherwise; rta_{ijt} is a dummy variable which takes a value of 1 if country pairs are signatories to the same regional trade agreement, 0 otherwise; α_{it} and α_{jt} represents the exporter-year and importer-year fixed effects respectively.

Variables identified in Equation 1 are described in the Table below.

Variables	Description
LGPD$_i$	LGDP$_i$ = (Log) Exporters GDP
	Based on the value-added approach, GDP represents the monetary value of all finished goods and services produced within a country. Inclusion of LGDPE therefore acts as a proxy in measuring the production capacity of the exporting country. The more goods a country is able to produce, the more supply it has to increase its volume of exports. This rationalises the posited hypothesis of a positive association between trading volumes and exporters GDP via the gravity theory of trade.
LGDP$_j$	LGDP$_j$ = (Log) GDP of the Importing Country
	Based on the expenditure approach, GDP represents the sum of purchases made within an economy. Given that an increase in purchases by the importer suggests a higher demand for goods and services, inclusion of importers GDP acts as a proxy in measuring the potential demand for international goods. Hence, a significant and positive association between importers GDP and volume of exports imply a significant market for the considered food commodity.
LMUSPOP$_j$	LMUSPOP$_j$ = (Log) Muslim Population of the Importing Country

	The demand for international goods derives from both the population and/or GDP per capita of the importing country. Inclusion of population assesses the market size (number of potential consumers) of the importing country whereas GDP per capita proxies the purchasing power of consumers. Given a positive and significant effect of Muslim population on volume of exports, one could infer a significant demand for the considered food by a large portion of the Muslim community within the considered market.
$LDIST_{ij}$	$LDIST_{ij}$ = (Log) Distance The larger the distance separating trading pairs apart, the higher the transportation costs incurred thus suppressing trade relations. This rationalises the adverse distance effect on trade as hypothesized by the gravity theory of trade.
$BORDER_{ij}$	$BORDER_{ij}$ = A dummy variable which either takes a value of 1 for trading pairs sharing a common border or 0 for trading pairs who do not share a common border. Given the lower transportation costs incurred by neighbouring countries, the gravity theory of trade posits higher levels of trade between bordering countries.
$COMLANG_{ij}$	$COMLANG_{ij}$ = A dummy variable which either takes a value of 1 for trading pairs speaking the same official language or 0 for trading pairs who do not speak the same official language. Not only does speaking the same official language enhance trust trade relations but it as well reduces the transaction costs to trade. For instance, countries speaking dissimilar official languages induce the need in hiring a translator thus making trade more expensive. Given that trade becomes more expensive, the levels of trade among country pairs are predicted to decline. Hence, as predicted by the gravity theory of trade, higher levels of trade are expected for countries speaking the same official language.
$COLTIES_{ij}$	$COLTIES_{ij}$ = A dummy variable which either takes a value of 1 for trading pairs who were ever in a colonial relationship or 0 for trading pairs who were never in a colonial relationship. This variable has been commonly used within trade literature as a proxy for cultural similarity. Given the uniqueness of each culture, the dietary requirements posed by different cultures may require the alteration of international goods to suit the importers cultural background. With an increase in transaction costs thus making trade more expensive, trade between countries of dissimilar cultural backgrounds is expected to be lower compared to countries of similar cultural backgrounds. Hence, as posited by the gravity theory of trade, trade among country pairs with similar cultural backgrounds are predicted to trade more with each other.
RTA_{ij}	RTA_{ij} = A dummy variable which either takes a value of 1 for signatories of the same regional trade agreement or 0 for signatories of different regional trade agreements. Given the abolishment/reduction of tariffs between signatories of the same regional trade agreement, the reduction in trading costs should result in higher levels of trade. This justifies the positive effect of regional trade agreements on trade as hypothesized by the gravity theory of trade.

Table 1: Description of Variables

Despite its empirical success at uncovering the trading dynamics, the applicability of the gravity theory of trade within the Halal context remains unclear. This study assesses the predictive power of the gravity theory of trade in predicting Malaysia's exports to the Key Halal markets. The results could contribute in aligning Malaysia's trade policies with the trading dynamics of the Key Halal markets. In addition, given the differing demand structures of consumers within international markets, Malaysia's accession into the Key Halal markets depends on its composition of exports. Hence, this study contributes in identifying the food commodities which displays market potential within the Key Halal markets. Considering this research objectives, the study is centred at determining the market potential for exportable food commodities by Muslim consumers. Hence, the importers GDP has been recalculated by multiplying the Muslim population with the GDP per capita of the respective importing country and expressed as $\ln gdpm_{jt}$. The Halal trade model developed in Equation 2 has been further modified by $\ln gdp_{jt}$ with $\ln gdpm_{jt}$. Such modification of the model tells us whether estimated export potential changes if we control for purchasing capacity of the importer's Muslim community instead of purchasing capacity of the importer. Thus, the modified model appears as:

$$\ln exports_{ijt} = \beta_0 + \beta_1 \ln gdp_{it} + \beta_2 \ln gdpm_{jt} + \beta_3 \ln muspop_j + \beta_4 \ln dist_{ij} + \beta_5 border_{ij} +$$
$$\beta_6 comlang_{ij} + \beta_7 colties_{ij} + \beta_8 rta_{ijt} + \alpha_{it} + \alpha_{jt} + \varepsilon_{ijt}$$

$$\ldots \ldots \ldots (3)$$

A two-way fixed effect model has been a commonly recommended gravity model estimation. Disdier and Head (2008) documented the increasing number of studies in incorporating importer and exporter fixed effects within their gravity specification. Anderson and Van Wincoop (2003) and Silva and Tenreyro (2006) support this approach due to its ability in capturing the multilateral resistance faced by trading pairs. The failure in incorporating the multilateral resistance faced by trading pairs would lead to an omitted variable bias as Gaurav and Mathur (2016) have evidenced. Sun and Reed (2010) as well stress the importance of including year effects within the gravity specification due to its ability in controlling for economic shocks affecting global trade. However, estimation of gravity model relying on the fixed effect may suffer from potential endogeneity (e.g. Chit et al. 2010). The Hausman-Taylor model (HTM) is strongly suggested by Egger (2002) to avoid such endogeneity issue in gravity model.

Considering that economic shocks such as the 2008 financial crisis and 2015 Chinese stock market crash coincide with the period of interest of this study, year fixed effects were initially employed within the gravity specification of this study. However, in counter to the endogeneity effect in the model, the models are re-estimated using the HTM technique. Results for the HTM models are discussed in the next section and results for year fixed effect models are presented in Appendix. The estimated results are adjusted for heteroskedasticity, serial correlation and outliers.

Results and Discussion

The models (Equation 2 & Equation 3) are estimated on export data for 10 selected commodities as listed below in Table 2. The estimated results are presented in Table 3 and Table 4 explained below in Section 4.1 and Section 4.2.

No	Commodity	%Malaysia's Food Exports	Cumulative % Malaysia Food Exports
1	Oil of Palm	53.706	53.70616
2	Food Preparations	5.618	59.32396
3	Oil of Palm Kernel	4.848	64.17245
4	Pastry	3.289	67.46111
5	Cocoa Butter	2.965	70.42624
6	Coffee Extracts	2.415	72.84156
7	Food Preparations of Flour, Meal or Malt Extract.	2.334	75.17597
8	Cocoa Power and Cake	1.993	77.16928
9	Non-Alcoholic Beverages	1.939	79.10872
10	Fat Preparations	1.758	80.86671

Table 2: The list of 10 commodities selected based on Malaysia's export share (2016) as published by the Food and Agriculture Organization of the United Nations.

4.1 Gravity Theory

The gravity theory of trade postulates the trade enhancing effects of regional trade agreements, contiguity, economic size and commonality of both linguistic and cultural background of trading pairs on trade. However, the theory also predicts that trade relations among country pairs deteriorate with distance. This study observes a quite consistent but mixed result for different commodities, especially in case of distance between the trading partners. The results are explained below.

Based on the value-added approach, GDP represents the monetary value of all finished goods and services produced within a country. Inclusion of exporters GDP therefore acts as a proxy in measuring the production capacity of the exporting country. The more goods a country can produce,

the more supply it must increase its volume of exports. This rationalises the posited hypothesis of a positive association between trading volumes and exporters GDP via the gravity theory of trade. Referring to Table 3 and Table 4, signs for coefficients of exporter GDP are as expected, indicating to positive effect of exporters GDP on trade. Similarly, coefficients are significant except for Oil of Palm Kernel in Table 4. Thus, the result confirms that increase in Malaysian GDP would increase Halal exports. For example, a 1% increase in Malaysian GDP is predicted to increase Halal exports of the Oil of Palm by ($e^{1.1341}$ or) 3.1% on average, ceteris paribus.

Based on the expenditure approach, GDP is merely the sum of purchases made within an economy. Given that an increase in purchases by the importer suggests a higher demand for goods and services, inclusion of importers GDP acts as a proxy in measuring the potential demand for international goods. Hence, as predicted by the gravity theory of trade, an increase in importers GDP should result in higher levels of exports. From the regression output presented in Table 3, the coefficients of importer GDP are positive for all commodities; however, are significant for all commodities except Oil of Palm. This result indicates that except for Oil of Palm, higher expenditure capacity of the Halal market will induce Malaysian Halal export. Similarly, in Table 4, coefficients of importer's Muslim GDP is positive and significant for all commodities except Oil of Palm. This result indicates that an increase in the expenditure capacity of the Muslim community in the importing country can induce Malaysian export of Halal food. For example, a 1% increase in the Muslim expenditure capacity of the importer is predicted to increase exports of Food Preparation by ($e^{2.735}$ or) 15.4% on average, ceteris paribus.

	Commodity									
	1	2	3	4	5	6	7	8	9	10
LGDPE	1.341***	1.733***	0.704*	1.806***	1.355***	2.399***	2.378***	0.842***	1.170***	0.784***
	(0.252)	(0.072)	(0.421)	(0.105)	(0.388)	(0.176)	(0.272)	(0.181)	(0.162)	(0.198)
LGDPI	0.284	2.719***	1.103**	1.741***	1.220***	2.334***	1.796***	1.924***	2.397***	1.507***
	(0.305)	(0.087)	(0.509)	(0.112)	(0.397)	(0.203)	(0.233)	(0.187)	(0.146)	(0.271)
LMUSPOPI	1.129***	-0.496***	-0.473	-0.002	0.689**	-0.276	0.783***	0.159	-0.406***	0.376
	(0.229)	(0.087)	(0.384)	(0.110)	(0.333)	(0.180)	(0.222)	(0.178)	(0.135)	(0.244)
LDIST	-2.284	-0.145	2.152	-0.347	1.286	2.270***	2.227**	0.290	0.310	2.148**
	(1.713)	(0.323)	(3.381)	(0.388)	(1.333)	(0.690)	(1.000)	(0.552)	(0.470)	(0.849)
BORDER	-7.805**	0.744	3.126	1.535	1.723	2.941	3.961	1.188	1.864*	2.762
	(3.759)	(1.447)	(7.489)	(0.994)	(5.251)	(2.285)	(5.795)	(2.108)	(1.128)	(2.504)
COMLANG	-	3.790***	-	2.907***	1.601	6.026***	1.869	0.908	2.274***	-6.552*
		(0.670)		(0.632)	(3.986)	(1.208)	(3.148)	(3.351)	(0.804)	(3.671)
COLTIES	-	0.453	-	0.668	-3.213	-	-2.436	-0.086	-0.732	1.202
		(0.845)		(1.028)	(4.118)		(3.570)	(1.593)	(1.216)	(2.430)
RTA	0.011	-0.180**	-0.638	0.188*	-0.017	0.080	1.005***	0.296*	0.488***	0.219
	(0.508)	(0.078)	(0.455)	(0.104)	(0.324)	(0.174)	(0.197)	(0.160)	(0.152)	(0.264)
Constant	-24.788	-94.143***	-44.917	-78.443***	-79.531***	-128.563***	-129.911***	-65.401***	-76.970***	-72.116***
	(16.664)	(3.265)	(31.255)	(4.002)	(15.284)	(7.487)	(10.702)	(6.656)	(5.594)	(8.793)
Observations	543	5,015	366	3,376	626	1,972	1,745	1,434	2,741	877
R-squared	0.867	0.711	0.914	0.659	0.795	0.605	0.619	0.747	0.597	0.755

Clustered standard errors in parentheses due to serial correlation and heteroskedasticity; Exclusion of outliers in estimating the prescribed model. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Regression Output from Halal Trade Model (Equation 2)

The larger the distance separating trading pairs apart, the higher the transportation costs incurred thus suppressing trade relations. This rationalises the adverse distance effect on trade as hypothesized by the gravity theory of trade. Interestingly, the adverse effect of distance in trade has only been observed for Oil of Palm, Food Preparation and Pastry, all three being statistically insignificant. The distance coefficients for other seven commodities appear as positive, which is a diversion from basic trade theory. However, among these seven commodities, only the coefficients for Coffee Extract, Food Preparations of Flour, Meal or Malt Extract, and Fat Preparation appears as significant. This result indicates that distance between exporter and importer is generally not a considerable barrier for Halal food trade. Findings of some previous studies examining Malaysia's trade relations with various Halal markets also documented such diversion from the predictions of the gravity model of trade. For instance, Abidin et. al. (2013) documented a positive distance effect for trade between Malaysia and member countries of the Organisation of Islamic Cooperation (OIC). In contrast, Masron et. al. (2014) in a similar study found an insignificant distance effect in trade. Mazlan and Hamzah (2015) lend support to the findings of Masron et. al. (2014) and Abidin et al (2013). In addition to this, they as well challenge the gravity model of trade in fully explaining Malaysian export of Halal products to Muslim markets. According to them, Halal food displays a strong inelastic demand indicating the consumers' willingness in paying a premium price for Halal goods. This then provides support to Cosgel and Minklers (2004) who presupposes the institutional effects of religion in dictating the consumption patterns of consumers. That is, as opposed to the cost-saving behaviour of economic agents as predicted by the gravity theory of trade, trade in Halal food commodities being more behavioural.

	Commodity									
	1	2	3	4	5	6	7	8	9	10
LGDPE	1.303***	1.753***	0.685	1.824***	1.453***	2.452***	2.403***	0.865***	1.196***	0.896***
	(0.245)	(0.073)	(0.418)	(0.106)	(0.392)	(0.178)	(0.273)	(0.181)	(0.163)	(0.203)
LGDPM	0.252	2.735***	1.137**	1.702***	1.112***	2.294***	1.725***	1.948***	2.398***	1.457***
	(0.301)	(0.089)	(0.512)	(0.114)	(0.402)	(0.208)	(0.238)	(0.191)	(0.150)	(0.279)
LMUSPOPI	1.137***	-0.537***	-0.549	0.018	0.705**	-0.312*	0.836***	0.103	-0.438***	0.353
	(0.234)	(0.090)	(0.394)	(0.113)	(0.344)	(0.187)	(0.229)	(0.183)	(0.140)	(0.255)
RTA	0.031	-0.182**	-0.628	0.193*	-0.010	0.092	1.010***	0.292*	0.438***	0.234
	(0.498)	(0.078)	(0.460)	(0.104)	(0.340)	(0.177)	(0.197)	(0.160)	(0.153)	(0.254)
LDIST	-2.440	-0.059	2.094	-0.352	1.393	2.372***	2.344**	0.332	0.318	2.222**
	(1.691)	(0.342)	(3.409)	(0.400)	(1.374)	(0.711)	(1.033)	(0.563)	(0.487)	(0.921)
BORDER	-8.102**	0.898	3.158	1.491	2.116	3.046	4.157	1.195	1.794	3.057
	(3.732)	(1.528)	(7.578)	(1.023)	(5.412)	(2.347)	(5.984)	(2.150)	(1.167)	(2.689)
COMLANG		3.953***		2.976***	1.620	6.254***	1.774	0.923	2.429***	-6.787*
		(0.705)		(0.650)	(4.111)	(1.240)	(3.251)	(3.420)	(0.831)	(3.932)
COLTIES		0.504		0.634	-3.317		-2.316	-0.124	-0.803	1.235
		(0.898)		(1.057)	(4.246)		(3.697)	(1.626)	(1.256)	(2.605)
Constant	-21.644	-94.897***	-43.407	-78.051***	-80.487***	-129.058***	-130.456***	-65.866***	-77.031***	-74.181***
	(16.391)	(3.410)	(31.451)	(4.090)	(15.620)	(7.664)	(10.960)	(6.725)	(5.712)	(9.363)
Observations	542	5,021	367	3,377	625	1,974	1,746	1,435	2,742	880
Number of ids	35	332	33	241	67	179	154	117	200	67

Clustered standard errors in parentheses due to serial correlation and heteroskedasticity; Exclusion of outliers in estimating the prescribed model. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Regression Output from modified Halal Trade Model (Equation 3)

Considering the uniqueness posed by different cultures, the dietary requirements of different cultures may necessitate the alteration of international goods to suit the cultural background of the targeted export destination. With an increase in transaction costs thus making trade more expensive, trade between countries of dissimilar cultural backgrounds is expected to be lower compared to

countries of similar cultural backgrounds. Hence, as posited by the gravity theory of trade, trade among country pairs with similar cultural backgrounds are predicted to trade more with each other. Referring to Table 3 and Table 4, all coefficients of colonial ties are statistically insignificant. Hence, cultural proximity does not seem to be a significant factor in Halal trade.

Given the lower transportation costs incurred by neighbouring countries, the gravity theory of trade posits higher levels of trade between bordering countries. In reference to Table 3 and Table 4, coefficient for common border dummies are observed insignificant except for Oil of Palm and non-alcoholic beverage. Interestingly, a significant negative border effect in trade of Oil of Palm is observed at the 5% level of significance, indicating that trade occurs more between non-bordering countries as opposed to neighbouring countries. It is expected because the two top Oil of Palm producers are Malaysia and Indonesia, which are the neighbouring countries.

Commonality of official languages is predicted to enhance trade relations due to increase in trust and the reduction in communication costs incurred. Except for trade in Fat Preparations, having similar linguistic background seems to induce trade relations with the Key Halal Markets. The coefficients are, however, statistically significant only for Food Preparation, Pastry, Coffee Extracts and non-alcoholic Beverage. What is even surprising is the negative effect of common language in trade of Fat Preparations. Specifically, at the 1% level of significance, countries with dissimilar official languages are expected to trade 6 percent more than countries of similar linguistic backgrounds.

Given the abolishment/reduction of tariffs between signatories of the same regional trade agreement, the reduction in trading costs should result in higher levels of trade. This justifies the positive effect of regional trade agreements on trade as hypothesized by the gravity theory of trade. As predicted by the conventional trade literature, the positive effect of regional trade agreements on Halal trade is evident for most commodities except for Food Preparations and Cocoa Butter. However, the majority of trade in the considered commodities indicate an insignificant effect of regional trade agreements in promoting Halal food trade.

Halal refers to the permissibility of something under Islamic law whereas Haram refers to those things forbidden under Islamic Sharia law. One of the requirements for the followers of Islam is to limit food consumption to Halal products only. While some of the dietary restrictions of Muslims are clear cut, the Halal status of some food categories are unclear. In this scenario, consumers would normally be guided by the fatwa regarding the permissibility of such food items. Different Muslim countries have different practice on the Halal standard of a product due to varying interpretation of the Sharia law in different School of Thoughts. This significantly affect halal standard and ultimately affect demand for halal certified products across countries. With the onset of differing fatwas and consumer preferences, consumers may posit differing demand structures for different goods thus affecting the market potential of goods within different markets. This may explain the diversion of Halal trade flows analysis from the conventional gravity trade theory. Consumers are often willing to bear additional trading costs as assurance in the Halal status of the respective international goods imported.

Overall, it can be inferred that the applicability of the gravity theory of trade within the Halal context provides mixed results. Despite this, the specified model on average, could explain approximately 60% to 90% for the 10 commodities considered within this study. However, the variability in the documented R-square values and the coefficients of different variables across commodities indicates that the standard gravity model may not be applicable to explain the trade of all Halal commodities. Commodity specific augmented gravity models could better explain the Halal trade.

4.2 Market Potential

The demand for international goods derives from both the population and/or GDP per capita of the importing country. Inclusion of population assesses the market size (number of potential consumers) of the importing country whereas GDP per capita proxies the purchasing power of

consumers. Given a positive and significant effect of Muslim population on volume of exports, one could infer a significant demand for the considered food by a large portion of the Muslim community within that market. In reference to Table 3 and Table 4, the positive and significant effect of the Muslim population of the importing country is observed in trade of Oil of Palm, Cocoa Butter and Food Preparations of Flour, Meal or Malt Extract. The result implies that a market potential exists for Malaysia for these three products within the Key Halal markets. On the other hand, significant but negative coefficient is observed for Food Preparations and non-Alcoholic Beverage, implying that the size of Muslim community may not play important role in capturing market share within the Key Halal markets. For other commodities, the coefficients of Muslim population are insignificant, implying that the size of Muslim community may not be a significant factor in capturing Halal market share for the remaining five commodities. Thus, controlling for the size of Muslim community in the model shows that except for Oil of Palm, Cocoa Butter and Food Preparations of Flour, Meal or Malt Extract, the other commodities display relatively less market potential for exports within the Key Halal Markets.

Conclusion

Malaysia's overdependence on its exports makes it vulnerable to the economic stability of its traditional trading partners. Given Malaysia's robust Halal standards, this study investigates the diversification possibilities of exports towards the respective Key Halal markets. In ensuring successful accession into these markets, this study first examine the applicability of the gravity theory of trade in explaining trade in Malaysia's top 10 food exportable with the Key Halal markets. Secondly, the study identifies the food commodities which display market potential within the Key Halal markets. These two objectives are fulfilled by adopting an augmented gravity model of trade specification commonly applied within trade literature and by employing a Hausman Taylor model.

In running the augmented gravity model of trade for all 10 commodities, it can be inferred that the applicability of the gravity theory of trade within the Halal context provides mixed results. Unlike the rational behaviour of economic agents as predicted by the gravity theory of trade, trade could with Halal markets seem to be behavioural. The somewhat behavioural trading dynamics of trade with the Key Halal markets may be explained by the presupposition made by Cosgel and Minklers (2004) who rationalises the institutional effects of religion in dictating the consumption patterns of consumers. Given that the dietary requirements of Islam only permit the consumption of Halal goods, consumers may be willing to incur additional costs to trade in ensuring the Halal status of international goods. Despite this, the specified model on average, could explain approximately 60% to 90% of export variabilities for the 10 selected commodities. The variability in observed R-square values and the coefficients of different variables across commodities indicates that the ability of standard gravity model in explaining trade with Key Halal markets varies across different food commodities. The overall result suggests that Malaysia could consider diversifying its exports to the Key Halal markets, especially the Oil of Palm, Cocoa Butter and Food Preparations of Flour, Meal or Malt Extract. For the other commodities, substantial promotional activities may be required to attract the Halal market with Malaysian product.

Limitations and Direction for future research

This study only focusses on one exporting country to assess the compatibility of gravity model in Halal food export. Including more exporters will provide a more generalized view on the topic.

Appendix A

Key Halal markets include Algeria, Bahrain, Egypt, Indonesia, Iran, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Syria, Tunisia, Turkey, United Arab Emirates, and Yemen (Salama, 2011). Imports from Malaysia and the World by key Halal markets as seen in Table 1 below have been collected from WITS.

	Key Halal Market		% Share of Food Imports from Malaysia
	Import Value (USD$'000)		
Year	Malaysia	World	
2000	1018910.95	34261761.33	2.97
2001	901178.68	32828698.95	2.75
2002	1070626.71	35613826.41	3.01
2003	1324287.62	39339307.22	3.37
2004	1516793.91	46068230.61	3.29
2005	1713217.80	46820619.99	3.66
2006	1608912.91	50599067.24	3.18
2007	2026292.25	67091947.05	3.02
2008	3584638.61	94034935.51	3.81
2009	2780498.89	75602038.48	3.68
2010	4270053.96	103694316.48	4.12
2011	5540529.81	126967720.04	4.36
2012	3738386.97	118663103.63	3.15
2013	3333607.21	125752254.66	2.65
2014	2627463.35	142262880.80	1.85
2015	2154849.25	120979933.96	1.78
2016	2394835.28	115093959.52	2.08
2017	2227427.97	72976427.03	3.05
Average	2435139.56	80480612.72	*3.10*

Table A-1: Imports from Malaysia and the world by the key Halal markets

Appendix B

Commodity										
	1	2	3	4	5	6	7	8	9	10
LGDPE	3.870***	0.742***	-4.374*	0.351***	3.272***	1.292**	-2.927***	-2.028***	0.652	-0.101
	(1.133)	(0.101)	(2.417)	(0.100)	(1.000)	(0.511)	(0.551)	(0.497)	(0.412)	(0.511)
LGDPI	-0.220	0.407***	1.643***	0.162	1.226**	1.096**	0.169	-0.499**	0.356	-0.135
	(0.434)	(0.141)	(0.230)	(0.183)	(0.476)	(0.458)	(0.439)	(0.220)	(0.432)	(0.216)
LMUSPOPI	0.765**	0.866***	1.479***	-0.213	-0.291	-0.310	-0.369	0.797***	0.154	0.186
	(0.333)	(0.183)	(0.539)	(0.131)	(0.243)	(0.377)	(0.226)	(0.095)	(0.251)	(0.113)
LDIST	-17.847**	-1.195***	-9.795	0.749***	-1.010	-0.919***	-0.539	-1.476***	-1.034***	0.963*
	(7.338)	(0.145)	(9.380)	(0.182)	(0.785)	(0.298)	(0.482)	(0.250)	(0.264)	(0.516)
BORDER	-32.354***	0.653	-24.326	1.350***	-0.184	0.116	0.887	1.660**	1.309**	1.960***
	(11.133)	(0.486)	(17.931)	(0.436)	(1.932)	(0.433)	(0.811)	(0.832)	(0.623)	(0.643)
COMLANG	-	0.509*	-	0.118	-1.171	-0.305	0.737	0.387	-0.715	-3.015***
		(0.284)		(0.337)	(0.886)	(0.625)	(0.766)	(0.764)	(0.535)	(0.702)
COLTIES	-	0.882***	-	0.975***	-0.137	-	0.333	1.093*	1.293**	0.561
		(0.253)		(0.331)	(1.279)		(0.739)	(0.610)	(0.586)	(1.115)
RTA	-1.304*	0.187	-2.878***	0.292	0.300	0.248	1.118**	-0.011	0.550	0.115
	(0.738)	(0.181)	(0.885)	(0.230)	(0.884)	(0.395)	(0.519)	(0.362)	(0.352)	(0.597)
Constant	61.057*	-22.220***	151.518	5.775	-90.592***	-37.487**	94.318***	76.682***	-8.422	6.307
	(30.208)	(3.179)	(135.024)	(4.322)	(32.040)	(15.094)	(21.509)	(16.181)	(13.527)	(13.576)
Observations	543	5,015	366	3,376	626	1,972	1,745	1,434	2,741	877
R-squared	0.867	0.711	0.914	0.659	0.795	0.605	0.619	0.747	0.597	0.755

Clustered standard errors in parentheses due to serial correlation and heteroskedasticity; Exclusion of outliers in estimating the prescribed model. *** p<0.01, ** p<0.05, * p<0.1

Table B-1: Regression Output from Halal Trade Model (Equation 2 – Time-fixed effect)

	Commodity									
	1	2	3	4	5	6	7	8	9	10
LGDPE	11.444*	0.792***	3.550**	0.355***	-0.331	0.796	-2.914***	-1.761***	0.658	0.209
	(5.945)	(0.087)	(1.579)	(0.100)	(1.284)	(0.581)	(0.553)	(0.519)	(0.412)	(0.532)
LGDPM	-2.798*	0.427***	1.694***	0.162	1.319**	0.896*	-0.069	0.283	0.335	-0.115
	(1.606)	(0.140)	(0.237)	(0.184)	(0.505)	(0.474)	(0.448)	(0.248)	(0.439)	(0.240)
LMUSPOPI	4.708**	0.794***	1.362**	-0.216	-0.356	-0.282	-0.009	0.457**	0.155	0.179
	(1.761)	(0.167)	(0.535)	(0.135)	(0.240)	(0.388)	(0.321)	(0.212)	(0.259)	(0.128)
LDIST	-17.665**	-1.187***	-9.795	-0.755***	-0.966	-0.941***	-0.524	-1.470***	-1.037***	0.856
	(7.096)	(0.146)	(9.392)	(0.183)	(0.761)	(0.296)	(0.482)	(0.252)	(0.265)	(0.516)
BORDER	-42.974**	0.849*	-23.974	1.342***	-0.174	0.104	0.909	1.564*	1.310**	1.881***
	(16.686)	(0.466)	(17.929)	(0.436)	(1.935)	(0.429)	(0.813)	(0.855)	(0.624)	(0.660)
COMLANG		0.512*		0.138	-1.151	-0.381	0.828	0.375	-0.731	-2.957***
		(0.286)		(0.338)	(0.875)	(0.627)	(0.798)	(0.766)	(0.536)	(0.694)
COLTIES		0.916***		0.977***	-0.151		0.257	1.118*	1.292**	0.414
		(0.262)		(0.329)	(1.275)		(0.779)	(0.615)	(0.585)	(1.093)
RTA	-1.286*	0.185	-2.878***	0.288	0.336	0.267	1.131**	-0.018	0.558	0.184
	(0.717)	(0.181)	(0.886)	(0.232)	(0.892)	(0.399)	(0.518)	(0.362)	(0.354)	(0.598)
Observations	542	5,021	367	3,377	625	1,974	1,746	1,435	2,742	880
R-squared	0.870	0.710	0.914	0.657	0.796	0.601	0.618	0.747	0.595	0.752

Clustered standard errors in parentheses due to serial correlation and heteroskedasticity; Exclusion of outliers in estimating the prescribed model. *** p<0.01, ** p<0.05, * p<0.1

Table B-2: Regression Output from modified Halal Trade Model (Equation 3 – Time-fixed effect)

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Determining comparative advantage of Bangladeshi leather goods and footwear products

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Keyword

Bangladesh, Comparative Advantage, Export Diversification, Footwear Products, Leather Goods, RCA index

Abstract

To address the current need for export diversification of Bangladesh, this study aims to determine the revealed comparative advantage of two potential industries of Bangladesh- leather goods and footwear products. In this regard, export patterns and performances of Bangladeshi leather goods and footwear products are analyzed from 2008 to 2017 using descriptive statistics, while the revealed comparative advantage is measured using the RCA index introduced by Balassa (1965). The results show that Bangladesh has revealed comparative advantage in both of its leather goods and footwear products with a gradual upward trend of RCA values. Footwear products show more stable incremental growth compare to leather goods. This study creates implications for policymakers to incorporate leather goods and footwear products in export diversification strategies of Bangladesh.

1. Introduction

Comparative advantage explains the ability of an economy to produce goods and services at an opportunity cost lower than its major trade competitors. Thus, the study of comparative advantage is significant for developing and least developed countries as they have a relatively small basket of export items. Determining the level of comparative advantage in selected industries opens the opportunity to recognize the export competitiveness and attain export diversification. Accordingly, this research concentrates on measuring the comparative advantage of selected industries in Bangladesh to identify the scope for export diversification. This study relates the current need of Bangladesh as it recently fulfilled all three eligibility criteria for graduation from the UN's Least Developed Countries (LDC) list and is interested in diversifying its export bases to ensure further economic growth.

Bangladesh, a small economy located in South Asia, is one of the five fastest-growing economies of the world, with a current growth rate of 7.3% (World Bank, 2019). Traditionally, this country has abundance in the labor supply, and more than half of the workforce previously employed in the agricultural sector. However, in the late nineties, few labor-intensive industries were developed along with the expansion of service sectors. The development of these industries helps to increase the trade volume and presence of Bangladesh in the global economy. According to the World Bank indicators, currently, trade consists of 35% of the country's GDP combining 15% export and 20% import. Moreover, the primary industrial sector of the country- readymade garments accounted for more than 80% of the country's total exports in 2016-17 (Central Intelligence Agency, 2019). Such a higher percentage of trade dependency on a single industry urge for the concern of policymakers to diversify its export base in other industries.

In this regard, the government of Bangladesh is now more interested in expanding its export bases and attracting more foreign investments in a few identified potential sectors other than the traditional one. According to the Bangladesh Investment Development Authority (2019), agri-business, garments, and textiles, ICT, leather and leather goods, electronics, plastics, light engineering, shipbuilding, tourism, ceramic, and medical equipment are few among those potential

sectors. The leather and leather goods sector contain the raw leather, leather goods, leather footwear, and other footwear. Thus, this sector includes both leather goods and footwear products, which are now a prime concern for policymakers to strategize. The current government incentives, the supply of good quality raw materials and abundant, low-cost labor make these two industries seem potential for the Bangladeshi economy. Thus, determining the comparative advantage and consequent potentiality of these industries is a prerequisite to develop strategies for export diversification through these industries.

Consequently, this research has been initiated to investigate the revealed comparative advantage of Bangladeshi leather goods and footwear products. To measure the comparative advantage, the export performance and pattern of these two industries are considered. In this regard, the main research question of the study is whether Bangladeshi leather goods and footwear products have revealed comparative advantages. To answer this question, this study hypothesized that Bangladeshi leather goods and footwear products have no export competitiveness. The answer to this research question is significant for the policymakers to set strategies for export diversification through leather goods and footwear products if findings show any revealed comparative advantage of Bangladesh on these industries. The finding is also crucial for the participants to set their export targets based on the overall position of the country in world export.

The paper is organized into six different sections, including this introduction section. The remaining of the paper is as follows. In section 2, the relevant literature on the revealed comparative advantage is presented to develop the research gap. Following that, the methodology of the study presents in section 3, where the calculation method of the RCA index, data and sources, and data analysis technique are outlined. Section 4 includes the analysis of significant findings of this study, followed by a relevant detail discussion of the analysis in section 5. The conclusion and significant implications of the study are presented in the final section of the paper. Moreover, the relevant references and appendix also included at the end of this paper.

2. Literature Review and Background

Due to the rapid globalization and trade liberalization, the determination of international competitiveness become one of the most critical issues in the economic analysis of developing and least developed countries. Such measurement of international competitiveness is traditionally significant for the policymakers and practitioners of the concerned industries. Historically, the comparative advantage theory was introduced by David Ricardo in 1817, where relative differences in labor productivity were considered (Abbas & Waheed 2017). However, authors also mentioned that, in the Heckscher–Ohlin (H-O) theory of comparative advantage, Heckscher (1919) and Ohlin (1952) focused on relative factor endowment and advised to attain competitive specialization and trade in the industries where those factors intensively used. On the other hand, Balassa (1965) introduced the concept of Revealed Comparative Advantage (RCA) to measure the comparative advantage rather than presenting theoretical arguments like the theories mentioned above.

Balassa (1965) proposed the Revealed Comparative Advantage (RCA) by considering the trade performance and the pattern of selected industries, which reflects the relative costs and non-price factors. The author measured the export performance of specific industries in a country by dividing the country's export share of the selected commodity by country's export share in the total export of the world. This process generates a normalized index that compares the relative share of a country in the total export of the world for the specific commodity. Therefore, a country considered specialized in the export of a commodity when market share is higher than the average for that commodity, which usually expressed as higher than unity. Usually, the RCA index only reveals the relative position of export performance of selected industries, but often failed to explain the reason behind the performance. Moreover, this index also criticized empirical distribution and theoretical foundation.

Despite its noteworthy drawbacks, the RCA index proposed by Balassa (1965) considered a reliable measure of relative export performance since its inception. Therefore, the RCA index is applied in the study of comparative advantage at the different levels of export countries. Previous pieces of literature in this field cover the study of comparative advantage at the country level, including a comparison between countries, sector level, industry level, and finally, product level. Using RCA, Abbas and Waheed (2017) determined the trade competitiveness of 14 specific industries of Pakistani agriculture and manufacturing sectors. Findings of the study exhibit comparative advantage of Pakistan in cotton, cereal, raw leather, and fruits of the agricultural industry and textile, carpets, sports items, and beverages in manufacturing industries. Nevertheless, this study is limited to only two sectors of the Pakistani economy and without a specific focus of any industries.

On the contrary, rather than focusing on multiple industries and sectors, Vanitha, Kumari, and Singh (2014), in their study of the export potentiality of vegetables in India, focused more narrowly on the specific industries within a sector. The main aim of the study is to find export competitiveness and comparative advantage of selected fresh vegetables in India. The authors prove the competitiveness using a couple of representative tools, including RCA, for a period of ten years from 2000 to 2010. The results of the study confirm that India has an export potentiality in the products of onion, potato, and tomato and comparative advantage in the production of onion and peas. However, this study is selective in finding RCA for specific product lines under the green vegetable industry rather than considering all fresh vegetables. In addition to determining RCA, this study also identified a few obstacles to the export potentiality of the selected products.

Moreover, considering one single industry as a whole, Pascucci (2018) explores the competitive position of the coffee roasting industry of Italy in the international market through a multidimensional framework. The author focuses on both competitive performance and potentiality of the Italian coffee roasting industry by several indices where RCA index one of those. The findings of the study show that the coffee roasting industry of Italy lost its competitive performance and potential in the last 50 years of the 21st century because of a lack of innovation. The author considered sixteen years as a study period, which is a little bit higher than other previous studies, which considered ten years to check the pattern of comparative advantage. Moreover, this study not only addresses the specific industry that substantially contributes to the economic earning and development of the country but also outlines how the country can develop the domestic market by nurturing export competitiveness.

In the same fashion of aiming an emerging specific industry, Islam and Siddque (2014) determine the competitiveness and structure of trade flows of the Bangladeshi leather industry with comparison to other selected Asian countries- Pakistan, China, and India. Using the RCA index suggested by Balassa (1965), authors explore the comparative advantage of the two categories of Bangladeshi leather exports - raw hides and skins, and leather and leather products. The study of a period of 10 years from 2004 to 2013 shows that Bangladesh has a relatively high revealed comparative advantage in its export of raw hides and skins only and has no such comparative advantage in the export of leather and leather goods. However, this study also urged for further in-depth investigations in this industry to find and nurture comparative advantage. The authors mention that this study is one of the preliminary studies on Bangladeshi leather export, which broaden the scope of further research in the same and similar industries as the footwear industry, leather clothing, and other leather items.

The discussion mentioned above emphasizes the need for the investigation of revealed comparative advantage of potential sectors, especially for the least developed and developing countries. As Bangladesh is interested in diversifying its export base, measuring comparative advantage is its potential sectors like leather goods, and footwear products would be helpful. Based on the previous studies reviewed so far, it is evident that there is still an opportunity for an in-depth investigation of revealed comparative advantage of the Bangladeshi leather goods industry. Moreover, the footwear products of Bangladesh, another potential industry is still untapped to

explore for revealed comparative advantage. Thus, there is a scope for further research in determining the revealed comparative advantage of Bangladeshi leather goods and footwear products.

3. Methodology

This research investigates the revealed comparative advantage of Bangladeshi leather goods and footwear products by analyzing the export performance of these selected industries. Thus, this study adopts a quantitative research approach where export data of the selected industries of the country are examined to conclude. Moreover, to measure the revealed comparative advantage, this study adopts the RCA index proposed by Balassa (1965). RCA index based on the relative export performances of a selected sector measures the competitiveness generated by factor endowment (Abbas & Waheed 2017). Thus, Balassa's RCA index of export competitiveness reflects the comparative advantage of the sector. The RCA index represented as follows,

$$RCA = \frac{\frac{X_{ij}}{X_{Wj}}}{\frac{X_i}{X_w}}$$

Where,

X_{ij}= Export of *jth* industry by *ith* country

X_{Wj}= World export of the *jth* industry

X_i= Total export of the *ith* country

X_w= Total export of the world

The RCA index consists of value between zero and positive infinity, which would be either greater than unity or less than unity. If the value is more significant than unity, RCA > 1 indicates that the country has a comparative advantage on the selected products, and if the value is less than unity, RCA < 1 indicates that the nation has a comparative disadvantage on that selected product. Besides, a change in the RCA index over time also indicates the competitive position of the country in that product (Abbas & Waheed 2017). Thus, this study adopts ten years (2008-2017) to consider the shift in the competitive position of selected products from Bangladesh. However, using Balassa's RCA index is not without its limitations. This index indicates the comparative advantage or disadvantage of a country in a selected product but provides no information about the reasons for this advantageous or disadvantageous position (Vanitha, Kumari & Singh 2014).

Besides, data used in this RCA index calculation consists of year-wise export data of both the leather goods and footwear products of Bangladesh and the world. Data collected from the Trade Map. Trade Map is an authentic and reliable source of trade statistics for international business development developed by the International Trade Centre of UNCTAD/WTO (ITC). For the leather goods export, Harmonized System (HS) code 42 and for footwear products, HS code 64 considered in data collection. However, as industry-wise and in total export data of Bangladesh are missing for the years 2014, 2016, and 2017, mirror data from the same source used for the whole period of 2008-2017 for export of Bangladesh in total and selected industries. The export data of all the commodities for all trading nations of the most recent period are still not available. To address this missing data and to ensure the reliability of the data, the most recent year 2018 is excluded from the analysis.

4. Analysis

This section presents the analysis of the data related to the revealed comparative advantage of Bangladeshi leather goods and footwear products. In addition to determining the revealed comparative advantage (RCA) index, this analysis section also comprises data regarding the export value of leather goods and footwear products and their contribution to total export of Bangladesh over ten years from 2008 to 2017. This analysis of export trends using total export value and analysis

of the relative contribution of each industry in total export creates a broader scope for policymakers to develop strategies for export diversification of Bangladesh through leather goods and footwear products.

Table 1: Bangladeshi exports of leather goods, footwear products and total to the world (in thousand USD)

Year	Total export of Bangladesh to the world	Bangladeshi export of Leather goods	Bangladeshi export of Footwear products	Leather export, % of total export	Footwear export, % of total export
2008	17,146,894	17,404	198,734	0.1	1.2
2009	17,606,879	20,869	229,699	0.1	1.3
2010	20,839,764	28,669	282,983	0.1	1.4
2011	27,234,920	38,522	393,337	0.1	1.4
2012	28,040,404	63,328	417,703	0.2	1.5
2013	31,889,977	93,023	560,250	0.3	1.8
2014	34,664,073	144,399	693,870	0.4	2.0
2015	36,340,569	206,683	836,544	0.6	2.3
2016	38,656,935	262,994	930,127	0.7	2.4
2017	40,831,854	280,688	981,260	0.7	2.4

Source: Author's calculation based on Trade map Data, 2019

Table 1 shows the total export of Bangladesh to the world as well as the total export of leather goods and footwear products from 2008 to 2017. Moreover, the contribution of these two industries in the total export of Bangladesh over the study period is also included in the table. According to table 1, while the total export of leather goods was USD 17,404,000 in 2008, which has increased almost 2.5 times to USD 280,688,000 in most the recent year 2017. On the other hand, the export of footwear products is also increased almost four times, from USD 198,734,000 in 2008 to USD 981,260,000 in 2017. Moreover, the export value of footwear products is higher than that of leather goods in each year of the study period.

Besides, figure 1 shows the export contribution of leather goods and footwear products to the total export of Bangladesh. The details of the total export of Bangladesh to the world, as well as the total export of leather goods and footwear products from 2008 to 2017, are presented in the appendix. According to figure 1, the export contribution of leather goods is lower than 1 percent of total export over ten years. However, the figure explicates that the export contribution of leather goods is increasing gradually over time from 0.1% in 2008 to almost 0.7% in 2017. A similar finding is also evident in the export of footwear products. However, the export contribution of footwear products to the total export of the country is comparatively higher than that of leather goods. In the initial year 2008, the export contribution of footwear products was 1.2%, which over the period increased by more than doubled to 2.4% in 2017.

In addition to analyzing recent export performance, the revealed comparative advantage (RCA) index is also calculated to find the export competitiveness of Bangladeshi leather goods and footwear products. Table 2 demonstrations the RCA index for both leather goods and footwear products of Bangladesh for ten years starting from 2008. According to Balassa (1965), a country has a comparative advantage in an industry when the RCA index is more significant than unity. According to this measure, Bangladesh has revealed comparative advantage in both leather goods and footwear products in most the recent year 2017.

Figure 1: Contribution of leather goods and footwear products to the total export of Bangladesh
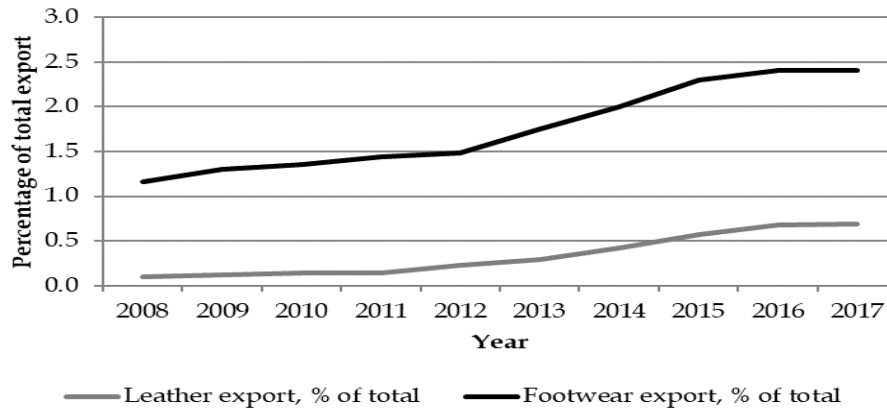
Source: Author's calculation based on Trade map Data, 2019

However, considering the last ten years, in the case of leather goods, Bangladesh has a comparative advantage since 2014 only, before that it had no comparative advantage in its leather goods. On the contrary, Bangladesh has a comparative advantage in footwear products over the last ten years as the RCA index is higher than unity in each of the years of the period of 2008-2017. This trend of revealed comparative advantage of Bangladeshi leather goods and footwear products for the period of 2008 to 2017 is depicted in figure 2. The trend of revealed comparative advantage over this period shows the pattern and structure of the comparative advantage.

Table 2: Revealed Comparative Advantage index of Bangladeshi leather goods and footwear products

Year	RCA Leather	RCA Footwear
2008	0.3	2.0
2009	0.3	2.0
2010	0.4	2.1
2011	0.4	2.3
2012	0.6	2.3
2013	0.7	2.6
2014	1.0	2.7
2015	1.3	2.8
2016	1.5	2.9
2017	1.6	3.0

Source: Author's calculation based on Trade map Data, 2019

Figure 2: RCA index of Bangladeshi leather goods and footwear products over the period of 2008-2017
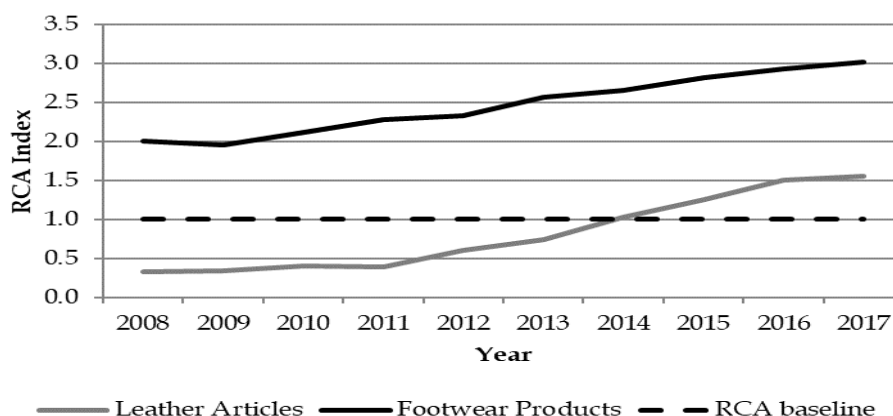
Source: Author's calculation based on Trade map Data, 2019

Figure 2 portrays that, RCA index of both leather goods and footwear products have risen progressively over the years. In the case of leather goods, the RCA index was below unity, only 0.3 in 2008, which touched the threshold point in 2014 and increased to 1.6 in most the recent year 2017. On the other hand, the RCA index of footwear products was 2.0 in 2008 and gradually increased to 3.0 in most the recent year 2017 with the only exception in the year 2009 when it decreased from the previous year. Besides, figure 2 shows that Bangladesh holds a revealed comparative advantage in its export of footwear product in each year of the period of 2008-2017, while it has a revealed comparative advantage in the export of leather goods since 2014 only.

5. Discussion

Bangladesh mainly depends on its ready-made garments industry for its export earnings, which account for more than two-thirds of the total export (Central Intelligence Agency, 2019). Determining comparative advantage on other industries and consequently developing those would help the country to achieve export diversification and further economic development. Thus, this study focused on measuring the revealed comparative advantage of two potential industries of Bangladesh- leather goods and footwear products for a period of 10 years from 2008 to 2017. Moreover, the contribution of these industries on the total export of the country is also evaluated to determine the overall picture of export potentiality. The findings of these analyses form a basis for policymakers to develop strategies for potential export diversification.

The RCA index calculated in this study reveals that Bangladesh has revealed comparative advantage in both of its leather goods and footwear products in the most recent periods as the RCA index has a value of more than unity. Thus, it rejects the null hypothesis that Bangladesh has no revealed comparative advantage in its leather goods and footwear products. Bangladesh is having a comparative advantage in its leather goods since 2014 only, whereas comparative advantage is evident in all the study periods for footwear products. Moreover, a trend line depicted on the RCA index of both industries shows a gradual upward trend of RCA values, which implies a favorable increasing position of comparative advantage over time. Though both industries show a definite increasing trend in its comparative advantage, footwear industries enjoy a more advantageous position than that of leather goods in each year of the study periods. Moreover, in comparison with leather goods, footwear products have a more stable gradual increasing trend in the comparative advantage position.

These findings significantly contribute to the existing literature of revealed comparative advantage of the Bangladeshi leather industry. Islam and Siddique (2014) concluded that Bangladesh had no revealed comparative advantage of leather and leather goods. The country is bestowed with

only comparative advantage on raw hides and skins of leather, which largely depends on the traditional position of Bangladesh in raw hides and skins processing and exporting. Moreover, Islam and Siddique (2014) considered the study period from 2004 to 2013 and concluded that until that period, Bangladesh had no RCA in leather goods. This current study significantly reduces this gap in the literature by extending the study period to the most recent years and find that Bangladesh had achieved RCA on leather goods in 2014, and since that period, the degree of RCA is increasing. Besides, this study also shed some light in the literature of comparative advantage of Bangladeshi footwear products as to the best of researcher's knowledge there is no such study had initiated so far.

In addition to the RCA index, the export contribution of both the leather goods and footwear products to the total exports of Bangladesh also calculated in this study. Leather goods have a very insignificant contribution to the total export of Bangladesh as the contribution is less than 1% of the total export. In the study period of 10 years, the contribution of leather goods is even less than 0.5% until 2014, and then it gradually increased to almost 0.7% in the most recent year in 2017. On the other hand, footwear products show a similar pattern of export contribution; however, it contributes more than the leather goods in each year of the study period. While the export contribution of footwear products was only 1.2% in 2007, it increased to 2% in 2014 and then gradually increased further to 2.4% in most the recent year of 2017.

In comparison with footwear products, leather goods show promising growth in the contribution of total export in Bangladesh as it increased almost seven times over the last ten years whereas footwear products reached only more than double. These findings clearly articulate the significance of footwear products in the total trade of Bangladesh. The footwear product is one of the most promising sectors that contributes to the national trade after ready-made garments and knitwear products. Therefore, footwear products require specific attention from the policymakers to capitalize on its increasing potentiality in the national economy. Besides, the recent growth in exporting and RCA justify the inclusion of leather goods in the potential sectors determined by the Bangladesh Investment Development Authority (2019). Though the recent contributions of leather goods are minimal compare to total trade, increasing trend rationalizes the need for careful attention of policymakers for further development of this potential sector.

Therefore, the findings of this study both in the position on revealed comparative advantage and the contribution to the total export of the country collectively create a broader scope for policymakers to develop strategies to achieve export diversification of Bangladesh. The findings of this study reveal that the advantageous position of Bangladeshi leather goods and footwear products are gradually strengthening over time. Though export contributions of these two industries are not very high compare to the total export of the country, detailed planning to capitalize on the current position of comparative advantage may change the position in the future. As the export contribution of these two industries is growing progressively, Bangladesh may develop strategies to expand export markets and increase its market share in the global market. Thus, export diversification can be facilitated by concentrating on both leather goods and footwear products.

6. Conclusion

Bangladesh is looking forward to diversifying its export base through selected potential sectors. Leather goods and footwear products are two listed in this category. These two industries are traditionally seemed potential for Bangladeshi economy because of supply of good quality raw materials and abundant, low-cost labor. Based on this fact, this study is initiated to determine the revealed comparative advantage of Bangladeshi leather goods and footwear products. Consequently, the main research question of the study developed as to whether Bangladeshi leather goods and footwear products have revealed comparative advantages. Furthermore, to answer this question, this study hypothesized that Bangladeshi leather goods and footwear products have no export competitiveness. Besides, the findings of this study are significant for the policymakers to set

strategies for export diversification through leather goods and footwear products if findings show any revealed comparative advantage of Bangladesh in these industries.

One of the most reliable measures of relative export performance, the RCA index proposed by Balassa (1965), is considered in this research to measure the revealed comparative advantage of Bangladeshi leather goods and footwear products. This study also includes the export performance and pattern of Bangladeshi leather goods and footwear products. Significant findings show that Bangladesh has revealed comparative advantage in both of its leather goods and footwear products in the most recent periods as the RCA index has a value of more than unity. Thus, the null hypothesis of the study that Bangladeshi leather goods and footwear products have no export competitiveness has been rejected. Moreover, the RCA index of both industries shows a gradual upward trend of RCA values, which implies a favorable increasing position of comparative advantage over time. In comparison with leather articles, footwear products have a more stable gradual increasing trend in the comparative advantage position.

This study has important implications for at least three critical areas. First, it reduces the existing gap in the literature regarding the comparative advantage of Bangladeshi leather goods and footwear products. While this study is first in its kind in the footwear products of Bangladesh, it significantly depicts the comparative advantage position of Bangladesh in leather goods after 2013. Second, this study provides important implications for the policymakers of the country. Considering a need for export diversification policy in Bangladesh, this study depicts the current position of leather goods and footwear products of Bangladesh in export contribution and RCA, which policymakers should consider in developing further trade policy. Export promotion policies, supportive programs, and trade liberalization in the inputs for these sectors are expected to contribute further expansion of these two sectors. Last but not least, this study might also be useful for firm-level management and decision making in related sectors.

However, this study also has few specific limitations. The RCA index only shows the revealed comparative advantage or disadvantage of a country in selected industries but provides no information about the reasons behind that. Thus, this study only broadens the opportunity for policymakers to develop strategies that diversify the export base of Bangladesh but have no explanations behind such a trend. Besides, using only a two-digit level of HS code, this study has only a general overview of leather goods and footwear products rather than a more intensive margin of export.

Consequently, this study opens the scope for further research that would address the issues in more detail. Future research may take place to find the reasons behind the current comparative advantage of Bangladeshi leather goods and footwear products, to compare the comparative advantage position of Bangladesh with its major competing countries in leather goods and footwear products, to determine the bilateral trade position of Bangladesh with leading importers of leather goods and footwear products in the world. Moreover, there are also scopes for similar research in other potential sectors of Bangladesh to find further scope for export diversification.

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Link between non-performing loans (NPL) and economic growth---evidence from an emerging economy

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Keywords
Non-Performing Loans; economic growth; banks; Bangladesh.

Abstract
Managing bad loans or Non-Performing Loans (NPL) is a deep-rooted and persistent issue of many emerging economies. Banks are experiencing NPLs which eventually are affecting the profitability of the banks. The purpose of this paper is to investigate the influence of factors of economic growth on NPLs of an emerging economy. In this study, GDP growth rate, real interest rate, inflation rate, one period lag value of NPL and unemployment rate are used as independent variables and ratio of Non-Performing Loans (NPL) to Total Loans is used as dependent variable. Data was collected from World Bank Open Data for Bangladesh and Bangladesh Bank for the year 1990 to 2018. The study employs multiple regression analysis and Multicollinearity test is also performed to test whether there is any strong correlation among the independent variables. This study reveals that NPLs rate can be significantly influenced by unemployment rate, inflation rate, real interest rate and one period lag value of NPL. However, GDP growth rate is found to be insignificant to NPLs rate in Bangladesh. This study might help policymakers to manage NPLs rate of Bangladesh in a better way to ensure sustainability of banks in future.

Introduction
Non-Performing Loans (NPL) also referred as bad loans or Non-Performing Assets have attracted numerous researchers for the last two decades as the NPLs rate is increasing for many countries. The increasing trend in NPLs is very alarming for every economy as it affects the growth of financial sector of a country and also affect the economic growth of a country. A loan is nonperforming when payments of interest and/or principal are past due by 90 days or more, or interest payments equal to 90 days or more have been capitalized, refinanced, or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will be made in full (International Monetary Fund, 2004). In case of developing countries, the role of banks turns out to be further domineering (Ikram et al. (2016). The sustainability of banks depends on NPLs of banks (Saba et al., 2012). The large level of NPLs can affect the stock price of the bank (Abdelbaki, 2010). In 2014, more than 30 countries experienced economic downturn from NPLs (World Bank, 2014).

Bangladesh as a developing country is also experiencing NPLs and there is an increasing trend in NPLs rate for the last five years. The NPL rate of Bangladesh in 2017 was 9.30 percent, in 2018, NPL rate was 10.40 percent and in 2018, it was 10.40 percent (Bangladesh Bank, 2019). The NPL rate up to June 2019 is 11.60 percent which is very high and alarming for Bangladesh. The development of a country largely depends on the banking sector stability of the country. If the banking sector is not stable, then the country may face economic downturn which is not desirable for the continuous growth of a country. Hence, the reasons for large NPLs in Bangladesh should be investigated. The

findings will help the policy makers to set up proper guideline about NPLs in future. The purpose of this study is to evaluate whether there is any link between Non-Performing Loans (NPLs) and economic growth in Bangladesh.

Literature review

Non-Performing Loans (NPL) are known as loans overdue for at least 90 days, which decrease the value of bank' loan portfolios (Labbé, 2016). Many researchers find that failed banks have substantial amount of NPLs (Berger and De Young, 1997; Jin et al., 2011). Yang (2017) stated that NPLs influence the economic growth by detaining the banks to play their role. NPLs-issues are sometimes referred as financial pollution (Ghosh, 2015; Makri et al., 2014). The declining credit quality in the banking sector poses a danger of systematic risk and create limitation in investment and growth. The previous studies about NPLs shown that the increase in NPLs plays a key role in the emergence of banking crises (Kunt & Detragiache, 1998; Gonzquierz-Hermosillo, 1999).

Bofondi and Ropele (2011) investigated the influence of macroeconomic variables to the credit quality of the loan portfolio of in Italian banking system by using a simple linear regression model and found that the real GDP growth rate and houses prices could inversely affect the NPL rate. They also found the unemployment rate and nominal interest rate could positively affect the NPL rate with different time lag.

Louzis et al. (2010) studied both macroeconomic and bank-specific determinants of NPLs for Greece banking sector and found that GDP growth rate negatively affect NPLs. In their study, they also found unemployment rate and nominal interest rate on loans positively influenced NPLs.

Mpofu and Nikolaidou (2018) examined the macroeconomic determinants of NPLs for 22 Sub-Saharn African economies. They found that GDP growth rate, domestic credit to private sector by banks as a percentage of GDP, trade openness, financial crisis and inflation rate could affect NPL rates significantly.

By using Meta-Regression Analysis, Machacek *et al.* (2018) identified that real economic growth, interest rate, unemployment rate and exchange rate might significantly influence the NPLs. Beck et al. (2015) investigated the macroeconomic determinants by taking 75 countries as sample. By using dynamic panel data analysis, they found that NPLs could be affected by Real GDP, nominal exchange rate and lending interest rate.

Kjosevski et al. (2019) explored the influence of macroeconomic and bank-specific determinants of NPLs in the Republic of Macedonia. They found that among the macroeconomic variables, GDP growth and unemployment rate could affect the NPLs. GDP growth negatively influenced NPLs while unemployment rate positively influenced NPLs in the Republic of Macedonia.

Farhan et al. (2012) studied the macroeconomic determinants of NPLs in Pakistani banking system and found that NPLs could be positively affected by interest rate, inflation, exchange rate and unemployment rate. The study also identified that NPLs could be negatively influenced by GDP growth rate. Anastasiou et al. (2016) examined the macroeconomic variables of NPLs in Greek banking sector. The study revealed that GDP, unemployment arte and interest rates significantly could affect NPLs in Greek banking sector.

Tandra (2016) investigated the macroeconomic determinants of effect on NPLs in Bangladesh banking sector. She identified NPLs to be negatively related to inflation and interest rate. She also identified that GDP and unemployment rate positively affected the NPLs in Bangladesh.

Abdelbaki (2019) examined the macroeconomic determinants of NPLs in GCC economies and found that non-oil GDP growth, domestic credit to private sector to GDP ratio and inflation could negatively affect NPLs while interest rate and financial crisis could positively affect NPLs in GCC economies.

Research methodology

The data for this study are collected from Bangladesh Bank and World Bank Open Data. The sample period covers 29 years, from 1990 to 2018. Yearly data for GDP growth rate, unemployment rate, inflation rate, NPL rate, real interest rate is collected from the above-mentioned sources. After reviewing the literature, the independent variables are selected to include in this study. In this study, NPL rate is dependent variable and growth rate of GDP, inflation rate, unemployment rate, real interest rate and one period lag of NPL are independent variables. The study conducted multiple regression analysis to find out the influence of independent variables over dependent variable. Multicollinearity test is also performed to test whether there is any strong correlation among the independent variables. To do the analysis, Eviews 9 has been used.

3.1 Model Structure

To investigate the link between NPLs and the economic growth in Bangladesh, we formulate our regression equation by considering the following equation model:

$$Y = c(1) + c(2) * X$$

For our study, we considered first difference method and converted all our variables into first differenced. In this method, there is no intercept. By using Least Squares Method, we estimate the equation as follow:

$$D(NPL) = C(1) * D(GDPG) + C(2) * D(UNEMP) + C(3) * D(INF) + C(4) * D(RIR) + C(5) * D(LAG1NPL)$$

Where,

NPL= Percentage of bank non-performing loans to total gross loans over period t; GDPG= growth rate of GDP; INF=inflation rate; UNEMP= rate of unemployment as percentage of the total labor force; RIR=real interest rate; LAG1NPL= one period lag value of NPL.

Findings/results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPG)	0.566675	0.603822	0.938480	0.3582
D(UNEMP)	-1.895314	0.846242	-2.239682	0.0355
D(INF)	-0.405778	0.171166	-2.370668	0.0269
D(RIR)	0.354883	0.123252	2.879334	0.0087
D(LAG1NPL)	0.569807	0.147668	3.858697	0.0009
R-squared	0.548789	Mean dependent variance		-0.540741
Adjusted R-squared	0.466750	S.D. dependent variance		3.176155
S.E. of regression	2.319354	Akaike info criterion		4.686030
Sum squared residuals	118.3468	Schwarz criterion		4.926000
Log likelihood	-58.26141	Hannan-Quinn criterion.		4.757386
Durbin-Watson stat	1.466405			

Table 1: Dependent variable D(NPL)

After substituting the coefficients, we get the following equation:

$$D(NPL) = 0.566674543376*D(GDPG) - 1.89531422199*D(UNEMP) - 0.405778162222*D(INF) + 0.354882940363*D(RIR) + 0.569806700956*D(LAG1NPL)$$

Table 1 shows that the R-squared value is 54.88 percent which means that 54.88 percent variance in the dependent variable, D(NPL) can be explained by the independent variables of the model. Here, we can also see that the P-value for D(GDPG) is 35.82 percent which is not significant at 5 percent significance level. It means that D(GDPG) is not significant to explain D(NPL).

F-statistic	0.922203	Prob. F (2,20)	0.4139
Obs*R-squared	2.277495	Prob. Chi-Square (2)	0.3202

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPG)	0.110617	0.619382	0.178593	0.8601
D(RIR)	-0.047820	0.128610	-0.371819	0.7139
D(UNEMP)	-0.189276	0.863187	-0.219276	0.8287
D(INF)	-0.001372	0.173080	-0.007930	0.9938
D(LAG1NPL)	-0.086704	0.222390	-0.389874	0.7008
RESID (-1)	0.339752	0.302880	1.121738	0.2753
RESID (-2)	-0.151803	0.256219	-0.592473	0.5602

R-squared	0.084352	Mean dependent variance	-0.019829
Adjusted R-squared	-0.190343	S.D. dependent variance	2.133399
S.E. of regression	2.327599	Akaike info criterion	4.745966
Sum squared residuals	108.3544	Schwarz criterion	5.081923
Log likelihood	-57.07054	Hannan-Quinn criterion.	4.845864
Durbin-Watson stat	1.933462		

Table 2: Breusch-Godfrey Serial Correlation LM Test

Again, in Table 1, we can see that the P-value for D(RIR), D(UNEMP), D(INF) and D(LAG1NPL) are 0.87 percent, 3.55 percent, 2.69 percent and 0.09 percent respectively. From this, we can say that the variables D(RIR), D(UNEMP), D(INF) and D(LAG1NPL) are significant at 5 percent significance level and all of these variables can significantly explain the dependent variable D(NPL). To test the serial correlation among the variables, we conducted Breusch-Godfrey Serial Correlation LM Test by considering two lags. Here the null hypothesis is that there is no serial correlation in the model. The hypothesis will be accepted if the P-value is more than 5 percent significance level. Table 2 shows the results of the test. We can see in Table 2 that P-value is 32.02 percent which is more than 5 percent significance level that means we can accept the null hypothesis that there is no serial correlation in this model after the first difference.

In this study we also conducted Variance Inflation Factors (VIF) test to check the multicollinearity among the independent variables. Table 3 shows the result of the test. In Table 3, we can see that there is no centered VIF as there is no intercept in our model. From Table 3, we can also see that the Uncentered VIF value is less than 10 which means there is no multicollinearity among the independent variables.

Variable	Coefficient Variance	Uncentered VIF
D(GDPG)	0.364601	1.139299
D(RIR)	0.015191	1.088370
D(INF)	0.029298	1.177764
D(UNEMP)	0.716126	1.055931
D(LAG1NPL)	0.021806	1.095117

Table 3: Variance Inflation Factors (VIF)

Discussions and conclusions

Our study shows that Non-Performing Loans (NPL) can be significantly influenced by inflation rate, real interest rate, unemployment rate and one period lag value of NPL if first difference method is used for the variables. It also identifies that GDP growth rate cannot significantly affect NPLs in Bangladesh. From our analysis, we can see that inflation rate and unemployment rate are negatively related to NPLs while real interest rate and one period lag value of NPL are positively related to NPLs in Bangladesh. The study also exposes that GDP growth rate does not have significant relationship with NPLs in Bangladesh. From this, we can suggest that the policymakers should closely observe the macroeconomic determinants of NPLs so that proper policy could be developed to control the high NPLs rate in Bangladesh.

Limitations and direction for future research

The limited availability of dependent variable and independent variable data for longer time periods controlled our study. In future, this study can be done with a longer period data and also with other relevant independent variables to explore whether NPLs in Bangladesh can be affected by any of the other variables.

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Effect of financial determinants on return of assets (ROA) in manufacturing companies of Bangladesh

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Keywords
Return on Assets, Firms' Performance

Abstract
Firms managers are now concerned about utilization of its assets to increase the performance of the company. Return on Assets (ROA) is mostly used by firms' managers to measure the performance of a company among many other indicators. This paper studies the factors that influence the ROA of listed manufacturing companies of Dhaka Stock Exchange. Total 16 different types of financial factors including current asset (CR), quick ratio (QR), cash ratio (CSR), operating profit margin (OPM), net profit margin (NPM), total asset turnover (TAT), current asset turnover (CAT), fixed asset turnover (FAT), account receivable turnover (ART), inventory turnover (IT), inventory holding period (IHP), debt to equity (DTE), debt to total asset (DTTA), debt ratio (DT), return on equity(ROE), earning per share (EPS) used as independent variables where return on assets (ROA) us an dependent. Total 25 companies from 8 different sectors used in this study and multiple linear regression model on panel data is used to measure the influence of these factors on ROA. This study has found, most of the factors maintain the typical (positive) relationship with ROA, but some of the factors having irregular (negative) relationship with ROA. But in reality, variable(s) found with negative influence might have a positive impact on ROA and vice-versa.

Price difference in flower business as affected by seasons: Case in Bangladesh

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Keywords
Flower business, Channel members, Seasonal variation, Profitability.

Abstract
As an emerging sector commercial cultivation of flowers is gaining popularity in Bangladesh and creating competition of high-quality flower production. This paper briefs out to examine the price differences practiced by growers and other channels members of the industry as affected by seasonal variation. Using the evidence collected from 220 respondents of growers and channel members like local trader, wholesaler and retailers in Manikganj, Birulia, Shyampur, Katlapur of savar, and Dhaka metropolitan area, the study finds that the price and profit of some selected flowers like rose, tuberose, marigold, gerbera, gladiolus, and jasmine varies seasonally. Higher price is observed for Rose, Tuberose, Gerbera, and Gladiolus in rainy season due to wastage of perishable flowers but lower in spring season because of favorable weather for production. But they receive more prices in winter season which is pick season for supplying marigold and lower price in summer whereas higher price in spring for trading Jasmine but lower in rainy season. In this way the overall market price is found uncertain and unstable in different a season that in turn affects the profit of the grower, local trader, wholesaler and retailer also. The study aims to help growers and traders to understand to apply better strategies and mechanisms to price stability in different seasons to increase Customer Retention.

Composition of board of director in the Indian Nifty 50 Listed Firms: Impact study from financial angle

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Abstract

   Purpose – applying a set of data Nifty 50 listed companies in India; this research paper is an attempt to empirically evaluate the effects financial performance of board of director's based on their characteristics.

   Design/ methodology/ approach – a sample size of 50 listed firms have been used, from the year 2008 to 2016. Time series and cross sectional are the basic features on which the entire study is based upon for panel estimation. Beside it, statistical measures like ordinary least squares (OLS) model of regression and robust regression is applied to mitigate the problems related to endogeneity.

   Findings – The primary results show that for financial performance measuring by ROA, ROE, ROCE, board of director's features has positive and relevant effect on financial decision and performance of the firms in our study on Indian Nifty 50 listed firms. The results also point out that in the perspective of nifty 50 listed firms, the leverage and firm size are negatively related with the financial performance of the firms.

   Limitations and implications of the Research –In accordance with the Indian corporate governance norms and reforms, it is obligatory for the listed companies to appoint independent directors system, by far is successful still, the regulatory and governing authorities should efficiently implement the norms of appointment of independent directors in listed companies to improve corporate governance system in India.

   Originality/value- Initially, in not similar fashion with the prior studies based on the developing nations, this present study interrogates the impact of features of board of directors on financial performance of Indian Nifty 50 listed firms. Thereafter, while a lot many studies applied a solitary indicator of firm financial performance, this study examines ROA, ROE and ROCE. Using the OLS estimation the present study emphasizes the endogeneity issue between firm performance and board of director's characteristics, and robust regression for mitigating the exactness of using OLS estimation.

Introduction

   The corporate governance composition of boards in terms of structure and size have paid much attention in the media and news in the corporate world in recent times, the failures of large companies was felt and observed many scams such as Enron, WorldCom and Parma- lat. The basic and primary idea is that, there is abundance of national and international guidelines for good corporate governance practices that affect matters related to board of director's characteristics (Bennedsen et al., 2008). Composition of company's board of director is one of the most valuable and significant mechanism of good corporate governance. The focal point in academic section is the effectiveness and efficiency of board of director's characteristics. Firm financial performance has often been employed as a proxy for deciding the governance potential efficiency of a company in many previous studies review such as. Ghosh, (2006), revealed that firm's performance either in

terms of accounting concept or in marketing measures, particularly large size firm is affected by size of board of director's that tends to have dampening impact.

The one of the most integral part of internal corporate governance mechanism is the board of directors. According to(Akhtaruddin et al.,2009; Haji & Mubaraq, 2015) the vital institution in the internal governance structure of a company includes board of directors, which facilitates a primary monitoring function for agency problems. Definition of effectiveness means an extent to which problems are solved and objectives have been achieved (Wadhwa, 2014). Previous studies showed that board of director's effectiveness essentially depend on board of director's attributes, as disclosure of more relevant information to external parties is an important characteristic that define the effectiveness of boards. Following(Bennedsen et al., 2008; Green & Homroy, 2018; Merendino & Melville, 2019) studies, board of director's effectiveness is defined in this study by its characteristics. In other way it can be said that, the improvement of the board of directors with reference to its integral elements such as independence, size, shareholding, nationality, multiple directorship, meeting and board committees can improve the effectiveness and capacity of the board to manage and monitor management and thus by increasing the scope and probability of providing more relevant information to external investors relevantly.

All those financial shows that assess and fulfil the firm's economic objective is a key matter of interest in management and other areas of researches. Firm financial performance concern with the a variety of subjective measures of how well a firm can apply its available assets from primary mode of operation to earn profit(Peters & Bagshaw, 2014). "The NIFTY 50 is the flagship index on the National Stock Exchange of India Ltd. (NSE). The Index measures the behavior of a portfolio investment of blue-chip companies through different domains, the largest and most liquid Indian securities. It includes 50 of the approximately 1600 companies listed on the NSE, captures approximately 65% of its float-adjusted market capitalization and is a true reflection of the Indian stock market". NIFTY 50 includes major economic sectors of India. It issues declaration to offers an investment to managers' publicity in one efficient portfolio in the Indian market. Indexing has been done since April 1996 and is appropriate for establishing parameter, index funds and index-based derivatives (NSI, 2019)[1].

Figure 1 shows that there was an increase in Nifty market at a CAGR of 11.7% in last 20 years (since 1996) and 7.5% in last 10 years (since 2006). In terms of yearly returns, since 1996, NIFTY 50 has given more than 50% return in (1999,2003,2007,2009,2018) 5 calendar years and more than 30% return in (1999,2003,2005,2006,2007,2009,2014,2017) 8 calendar years. NIFTY 50 has fallen by over 20% only in (2008, 2011) 2 calendar years, giving positive returns in 16 out of 23 years.

Figure 1: Performance of NIFTY 50

Data for 2019 is as on March 29, 2019.   Source: NSE

From the above context, research problem is clear and that objective is to study the impact of board effectiveness policy on the financial performance of the firm financial performance of NIFTY

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[1] NSE is the brief name of the National Stock Exchange of India. Available in https://www.nseindia.com

50 traded companies, therefore, necessary steps will be taken to provide a clear picture for indexing board of directors. It is significant to enquire the relevant question the impact of composition of boards of directors on NIFTY 50 firm's financial performance? Recent research work has answered this question by showing the impact of board of directors in different countries. Further, with a shortage of empirical studies on the impact of board of directors on many aspects of the Indian economy; academic research has not yet studied the impact of composition of board effectiveness on the financial appraisal of NIFTY 50 listed firms in India.

A lot was said about financial performance of NIFTY 50 traded firms based on the board of directors' characteristics in different countries, through many pieces of writing. The present study aims to study the effect of board of directors on the financial performance of NIFTY listed firms and determine whether it was affected positively or negatively. The rest part of this paper organized as follows. Second section deals with the formulation of hypotheses and review of different literatures. The next and the third part constitute the research methodology section. Section four focuses on the descriptive statistics and results of the empirical tests. Lat and the fifth section include the concluding remarks of the study. Section six reveals the implications and drawback of the study.

Literature Review and hypothesis development

The important mechanism of internal corporate governance is constituent of board of directors. Board of directors and business organizations occupies a unique position in corporate governance. Both big and small organisations are governed by corporate governance. It is mandatory for the corporate entities to have board of directors by statue. Many studies have been done on various aspects of characteristics of board of directors and their impact on the financial performance. Some of the previous studies argued that the board size provides board effectiveness to improve firm performance. Guest(2008) argued the demerit that larger board size may face lack of coordination and decrease the board's ability to oppose and find loopholes the control of top managers due to lack of opportunities of discussion of management problems. In the other hand, Guner et al., (2008) argued that constitution of large board size may facilitate firms in offering suitable advice that comes from directors' external link and due to expertise knowledge and experience in their respective fields

Jermias & Gani(2014) interrogated the association between board of directors' dependence, managerial ownership and firm's performance based on board capital. The outcomes are consistent with the view that firms advantage from board capital in terms of outside directors' capability to check managers performance and provide advice and counsel to managers. Wang (2013) argued and concluded that different firms have different requirements based on complicated and simple firms' performance-improvements board structure. Although large boards faces communication distortion and decision-making problems, they facilitates firms via making available more advisory functions. Guest (2009) studied the impact of board size on firm performance for a large sample of 2,746 UK listed firms over 1981-2002.They concluded that board size has a strong negative impact on financial performance .In addition, Ranasinghe (2010) found that board size had a negative association with Return on Assets and market book value, which was applied as proxies for firm performance.

Many prior studies have been done to know the relationship between board size and firm performance has produced varied outcomes. It is discovered in most of the studies that the affiliation between board size and firm performance is negative (Bennedsen et al., 2008; Guest, 2009; Lin, 2011).on the contrary, Conheady et al.,(2015) find a significant positive relationship between the firm's measure of board effectiveness and the firm's contemporaneous and future market measure of performance. Furthermore, Bonn et al.,(2004) study and compared the sound effects of board size, proportion of female directors, proportion of outside directors and average age of directors on firm performance in Japanese and Australian firms. We found that board size and age of directors were negatively associated with the performance of Japanese firms. For Australian firms, outsider ratio and female director ratio were positively related with performance.

Mohd Nor et al., (2014) analysed the trend of board characteristics and try to explore the association of board characteristics and Malaysian firm performance. The data were collected from the analysis of companies' annual report for a sample size of 169 companies for period of 2009 and 2010. Study shows that there is a significant relationship between board size and firm performance. In addition, there are no association between proportions of independent non-executive directors to firm performance. Lin (2011) investigated the impact of duality and board structure on corporate performance. The finding of small and medium-sized companies advocate that the supervisory directors, outside independent and inside directors had positive impacts on financial performance, ROA and ROE. Prior studies conducted in India have not yet studied and appraised the impact of board characteristics on the financial performance. So, this study try to put in literature by introducing the following conceptual framework as shown in the Figure 2 to examine the impact of board characteristics on the financial performance of the firms.

Figure 2: Conceptual Framework
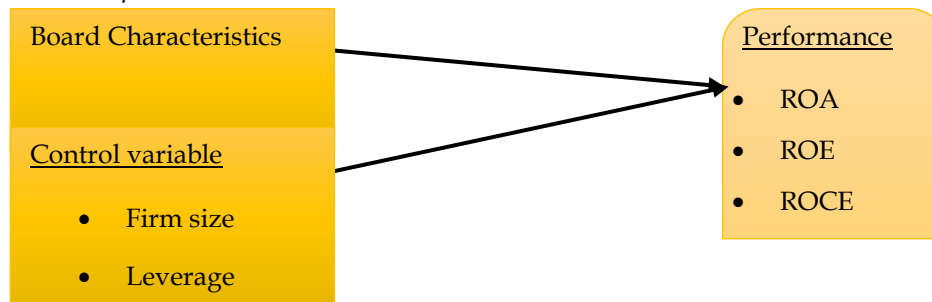
Based on the above literatures review and objectives of the study demonstrated above, the hypotheses of the present study are:

H_01: There is positive associated between board characteristics and return on assets of Nifty 50 listed firms.

H_02: There is positive associated between board characteristics and return on equity of Nifty 50 listed firms.

H_03: There is positive associated between board characteristics and return on capital employee of Nifty 50 listed firms.

Research Methodology
Date

The Research paper is based on pure secondary data which has been adopted from Prowess IQ a database of Indian companies, Money control website[2], books and journal. Whereas board of directors and ownership structures, data were retrieved from the corporate governance reports section from the annual reports of the selected sample companies. Data which we need to justify objectives, collected for 8 years from 2008–2009 to 2015-2016. The purpose of the index is to compute the performance of large market capitalization companies.

Sample Size

Companies constituting the S&P CNX Nifty 50 firms which are registered on the National Stock Exchange of India have been considered to fulfil the purpose of this study. (NSE), is a leading stock. The Nifty companies were classified into four eleven-samples classification as showing in the

Table 1

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[2]Moneycontrol is India's leading financial information source. See https://www.moneyworks4me.com

Table 1: Number and Percentage of sample firms by industry

S. no	Industry	Number	Proportion
1	Automobiles	8	16%
2	Cement	3	6%
3	Construction	1	2%
4	Consumer Goods	3	6%
5	Energy	8	16%
6	Financial Services	10	20%
7	IT	5	10%
8	Media and entertainment	1	2%
9	Metals	4	8%
10	pharma	5	10%
11	Telecom	2	4%
Total		50	100%

Variables

There are three variables in this Research; the independent variable is board of director's attributes and the dependent variable and control variable are as follow:

Return on assets measures by net income over total assets at the end of the financial year.

Return on equity is measured by profit after tax divided by total equity shares in issue.

Return on capital employee is measured by net profit after tax /capital employed.

Firm size is measured by the natural logarithm of total assets.

Leverage measures by total debt percentage are divided by total assets.

Statistical tools and Methods

The study comprises descriptive statistics such as mean, median, mode, correlation and multicollinearity diagnostic, ordinary least squares and robust regression eviews 10 using review of literature to study the impact of board of director's characteristics on financial performance of Nifty 50 listed firms.Therefore, the following model is developed:

$ROA_{it} = \alpha + \beta_1 BDC_{it} + \beta_2 LEV_{it} + \beta_3 FSIZE_{it} + \varepsilon_{it}$

$ROE_{it} = \alpha + \beta_1 BDC_{it} + \beta_2 LEV_{it} + \beta_3 FSIZE_{it} + \varepsilon_{it}$

$ROCE_{it} = \alpha + \beta_1 BDC_{it} + \beta_2 LEV_{it} + \beta_3 FSIZE_{it} + \varepsilon_{it}$

Where,

α is the intercept in this study, ε is defined as an error term for the model, i and t correspond to firm and year, ROA is return on assets, ROE is return on equity, ROCE is return on capital employee, BDC is board of director's characteristics, LEV is the short form of leverage, and FSIZE is the firm size.

Data Analysis and findings:
Descriptive statistics

Table 2 describes descriptive statistics for the variables applied in this research paper. It gives details information in the form of descriptive statistics, skewness, kurtosis and number of observations for the dependent variable and its causal and control variables. The output shows that skewness and kurtosis are in the range of ±1 and ±3 respectively. The results demonstrate the trend of financial performance measurements; ROA, ROE, and ROCE over the period 2008–2016. Similarly, the results show the descriptive statistics for board of director's characteristics, leverage, firm size variables for the same period. The results reveal that ROA, ROE, and ROCE each range between minimum values of -5.08, -18.18and -45.36and maximum values of 38.71, 86.91and 72.75with a mean of 11.98, 23.13 and 17.09 respectively. Moreover, board of director's characteristics ranges between a minimum of 0.44, a maximum of 0.94 with a mean value of 0.74, and standard deviation of 0.10.

Controls variables have an average value of 11.95, 5.20, a minimum of .01,3.75 with standard deviation of 22.8,0,90 respectively.

Table 2: Descriptive Statistics

Stat.	ROA	ROE	ROCE	BDC	LEV	FSIZE
Mean	11.98	23.13	17.09	.74	11.95	5.20
Maximum	38.71	86.91	72.75	.94	87.61	10.14
Minimum	-5.08	-18.18	-45.36	.44	.01	3.75
Std. Dev.	7.44	16.12	12.42	.10	22.8	.90
Skewness	0.65	1.61	0.72	-0.16	1.8	0.12
Kurtosis	.247	1.73	2.47	-.61	2.27	2.09
observations	400	400	400	400	400	400

4.2. Correlation and multicollinearity diagnostic

Table 3 explains the Pearson correlation matrix and multicollinearity diagnostics for different dependent and causal variables. The coefficients are based on the data from 50 Nifty Indian listed firms with 400 observations for the period 2008/09–2015/16. Results reveal the positive relationship of board of director's characteristicswith financial performance. This indicates that if the companies follow the rules of board of director's characteristics, the financial performance of the companies are going to increase. Similarly, the result also shows a positive relationship between firm leverage and financial performance measured by ROA, ROE, and ROCE, which means that if there is increase in leverage it leads to an increase in profitability. The result also shows a positive relationship of board of director's characteristicswith leverage and firm size. This reveals that board of director's characteristicsleads to increase in leverage and firm size whereas board of director's characteristicshas a negative association with financial performance measured by ROA, ROE, and ROCE.

Table 3: Correlation Matrix and Multicollinearity Diagnostics

Variables	ROA	ROE	ROCE	BDC	LEV	FSIZE
Correlation matrix (Panel A)						
ROA	1					
ROE	.85**	1				
ROCE	.56**	.52**	1			
BDC	.17**	.06	.052	1		
LEV	.012	.04	.03	.02	1	
FSIZE	-.234**	-.25**	-.18**	.04	-.15**	1
VIF				1.84	1.26	1.37
**. Correlation is significant at the 0.01 level (2-tailed).						

4.3 Results of model estimation

Table 4 draws conclusion of regression estimation of firm financial performance on board characteristics, and control variables. The regression results in Columns 1, 2 and 3 depend upon accounting measures for ROA, ROE and ROCE, respectively. The board characteristics variables, the coefficient of BDC is positively and statistically significant at the 1% significance level for ROA, ROE and ROCE. The conclusion favors the hypotheses of the study (H_01, H_02, H_03) and are similar with those of (Kao et al., 2019; Mohd Nor et al., 2014; Wang, 2013), suggesting that board characteristics variables does enhance firm financial and overall performance. The hypotheses have been accepted as the coefficient of TIER is associated positively and significantly with ROA, ROE and ROCE at the 1

% level. Table 4 depicts that the coefficient value of leverage is negative and insignificant for all ROA, ROE and RCOE. The result is consistent with (Doan & Nguyen, 2018). Moreover, the coefficient of Firm size is also negative and significant at the 1% level for both ROE and ROCE, These results are consistent with those of (Guest, 2009; Wang, 2013).

Table: 4 Regression Results Estimation

Models	ROA		ROE		ROCE	
Variable / Type	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
C	16.07	0.0	-42.53	0.0	29.32384	0.0003
BDC	14.64	0.0	20.86	0.006	31.46188	0.0001
LEV	-0.02	0.16	-0.057	0.13	-0.01536	0.6963
FSIZE	0.004	0.017	-6.39	0.0	-6.07634	0.0000
R-squared	0.13		0.11		0.11	
F-statistic	20.29		17.15		17.70	
Prob.	0.0		0.0		0.0	

Robust Regression

The panel regression outcome may face the issues related to endogeneity. In this research study, endogeneity of board of director's characteristics through firm financial performance would entail that the panel regression estimates, are significantly biased and incoherent, and so it cannot apply to draw conclusions about the causality of the association. So, we go for applying the robust regression to tackle the endogeneity issue. The equation is applied to carry out the robust regression is the same as equation (1). However, robust regression estimation may not convey better estimates in comparison to panel estimation.

Table 5 demonstrates the results of the robust regression model. The results show that there is a slight change in the values of coefficients, standard errors and t-statistic from the values of OLS regression model in table 4. The coefficient estimates in case of robust regression are not inflated, deflated or highly deviated from the coefficient estimates of OLS regression. Further, the standard error of both; robust regression and OLS regression are about similar which indicates a proper estimating of the results.

With view to the outcome of robust regression model, the second-stage firm performance equations are presented in Columns 1-3 of Table 4. The coefficients signs on the causal and control variables in each and every equation are g enerally as predicted. In general terms, the robust estimates are larger than those of panel regression estimation in Table 4.

Table 5. Robust Regression

Models	ROA		ROE		ROCE	
Variable / Type	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
C	29.8911	0.0000	48.0912	0.0	34.2806	0.000
BDC	12.3953	0.0001	7.10256	0.1697	13.3755	0.0091
LEV	-0.0337	0.0345	-0.0677	0.0084	-0.01432	0.5745
FSIZE	-5.2475	0.0000	-6.1913	0.0	-5.19885	0.0000
R-squared	0.16		0.07		0.07	
Prob.	0.0		0.0		0.0	

5. Conclusion

This Research paper investigates the impact of board of director's features on firm performance. In compare to previous evidence for developing nations that reveals no connection between independent directors composition and firm performance, our results shows that for financial performance measuring by ROA,ROE,ROCE, board of director's characteristics has a statistical significant and positive impact on firm performance in our work study on Indian Nifty 50 listed firms. It also points out that firm size and the leverage are negatively associated with firm performance in the context of nifty 50 listed firms. These findings can be concluded in association to

the several institutional theories that portrays these mechanisms are resultant of practices or regulations emerge from coercion by legislators who impose certain good practices in order to improve organizational effectiveness, or as a result of imitation. In other words, the findings may be referred to this theory which suggests that companies might adopt practices or regulations as a result of coercion from a legislator who imposes some practices in order to improve organizational effectiveness. However, there is no prediction that the adoption of these regulations will improve organizational effectiveness and performance efficiency.

Appendix A: Table 5. Variables Definition

Variable	Measurement	References
Dependent variables		
Return of Assets (ROA)	ROA = Profit after Tax / Total Asset	(Guest, 2009; Guner et al., 2008; Villanueva-Villar et al.,2016)
Return on Equity (ROE)	ROE = Profit after Tax / Total Equity	(Hassan et al., 2017; Kao et al., 2019; Singh et al., 2018)
Return on capital employee (ROCE)	ROCE= Net profit after tax /capital employed	(Vishwakarma & Kumar, 2015)
Independent variables		
Board of Director's Characteristics	1. Size of board of directors is at least 5 but not more than 16 members. 2. The qualifications of the board members are revealed. 3. All members attended at least 75% of board meetings. 4. The number of board meetings held in the year and the attended physically, and/or attended via electronic media is disclosed for every board member. 5. The firms has implemented a procedure for a regular assessment of the board. 6. Public disclosure of offices held by any independent director in other companies 7. Separation of chairman and CEO 8. Firm has annual board meeting only for non-executives 9. Board performance is periodically evaluated 10. Company has a designated "lead" or senior non-executive board member Chairman of board independent director 11. The governance/nomination committee is composed of independent board members 12. No former CEO of the company serves on the board Time gap between the two meetings does not exceed 4 months 13. Governance/nomination committee has a written charter or terms of reference 14. Board is controlled by more than 50% of independent outside directors	(Abdallah & Ismail, 2017; Al-Malkawi et al., 2014; Ararat et al., 2017; Srairi, 2015; Wahab et al., 2007)
Control variable		
Firm size	Natural logarithm of total assets.	(Arora & Sharma, 2016; Ullah, 2017)
Leverage	It measured by total debt to total assets	(Abdallah & Ismail, 2017; Hassan et al, 2016)

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Impact of corporate social responsibility (CSR) on the organizational financial performance: A Study on the State-Owned Commercial Banks of Bangladesh

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Keywords
Corporate social responsibility, Financial Performance, State owned commercial banks, Performance Indicator, Bangladesh.

Abstract

Corporate social responsibility (CSR) activities which are beyond legal obligation of the organization are the voluntary activities performed by the organizations towards the society. The study identified the influence of CSR activities on the financial performance of the state-owned commercial banks of Bangladesh where secondary and primary data were analyzed by using spss software. From the correlation and regression, the study found positive relationship among most of the financial performance indicators of the state-owned commercial banks of Bangladesh. The study claims a strong and considerable positive relationship between CSR activities and the gross profit of the banks although some CSR activities have very insignificant relationship with the financial performance while very few CSR activities have no effect at all on the performance of the organization. The study further found that, for some CSR activities the state-owned banks do not think about financial benefits, rather they perform those as their responsibility towards the society and these types of CSR activities improve their image and acceptance to the customers. Finally, the recommends that, the state-owned commercial banks should more focus or at least continue their CSR activities. The study also recommends that in selecting the CSR field the authority should be careful regarding the benefits for the banks as well as to the society. Finally, more research should be conducted by the respective authority for identifying the suitability of the CSR activities.

Spending on human resource: Cost or investment?
-a developing country perspective

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Keywords

Human Resource Investment, Human Capital, Financial Performance, Human Resource Accounting, Bangladesh, Human Resource Management.

Abstract

Purpose of the research: The purpose of this research is to study the impact of Human Resource (HR) spending on the financial performance of companies in Bangladesh and contribute to the limited research on HR Investment from a developing country perspective. We examine whether spending more money on HR leads to increased financial performance.

Design/methodology: We collected secondary data published in annual reports of listed banks in Bangladesh that represents a human capital-intensive industry. Then, we tested our hypothesis by using SPSS. Multivariate regression analysis is run on panel data of 29 privately owned banks listed in the Dhaka Stock Exchange, over 5 years (2013 to 2017). HR expense, which includes compensation and training, is used as a proxy of HR spending, and Return on Asset (ROA) is used as an indicator of financial performance. A variety of bank-specific variables and industry factors are used as control variables.

Results/findings: Results show that HR investment has a significant positive impact on banks' ROA. This means that an increase in spending in HR would very likely lead to an increase in ROA. This finding is in line with previous researches, which highlighted that when companies spend more on HR and consider employees as a value-creating source, employees become more motivated and contribute more. This enhances the Company's financial performance.

Practical implications and Conclusions: This study holds several managerial implications. Firstly, it challenges traditional management's belief to consider employees as costs. It emphasizes that money spent on employees in the form of salary, training, and other benefits should be considered as significant investments rather than mere operational costs. Secondly, investing more in training can help employees acquire new skills and gain more knowledge. Finally, a competitive salary can enhance employee morale and assist in employee retention.

Empirical analysis on factors affecting the Employee Retention practices in the private Organizations: A survey in Bangladesh

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Abstract
Employee retention has become a key concern for business organizations of Bangladesh in recent times. Skilled and trained employees are the integral asset for the organizations. It is imperative to retain the talented employees who are loyal towards the organization and can contribute effectively to the development of the organization. The purpose of the research is to investigate the factors affecting employee retention rate of private sector. The deep theory analysis of variables affecting retention intentions brings the researcher to develop a research model consisting of four variables which are working stress, job satisfaction, organizational climate, and turnover intentions as well as three research hypotheses. Instruments of data collection using questionnaires, sample of 195 respondents who are employed in Beximco Limited and ACI Limited. Then, data is analyzed using Structural Equation Modeling (SEM). The results of three research hypotheses test using SEM shows that job stress, organizational climate and job satisfaction, has an influence on turnover intention. The result might assist the organizations to develop some successful strategies to retain their qualified employees. This paper may also provide some directions for the future researchers to conduct research on the related fields to develop more in depth knowledge on employee retention practices in Bangladesh.

Human resources management practices: A case of National University in Bangladesh

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Abstract
    Like any other organization, efficient manpower is the precondition of the success of University. Manpower is the strategic resource for any organization. So, this resource should be managed strategically. This study has been conducted to evaluate the HRM practices of National University, Bangladesh. Moreover, the aim of the study is to identify the key areas where the University authority can emphasize to develop their manpower in order to build and retain a talent workforce. This study is mainly a quantitative study. In this study, both primary and secondary data has been used. The faculties and the employees who work into the central campus of the University are considered as the population. The Yamane Equation has been used to determine the appropriate sample size. The sample size of the study is 86 where 11 respondents from Faculties and 76 respondents from Staff. Though the population is not homogenous, stratified sampling technique has been used to collect the primary data. Data has been collected randomly from the sample. SPSS version 23 has been used to analyze the collected data. The study has been conducted basing on five hypotheses. T- Test has been used to test the hypotheses. The study found the areas of poor performance regarding HRM functions of NU basing on the response of sample faculties and staffs. Moreover, the study also compares the satisfaction of Faculties and Staff basing on some common issues. This study founds Staff are given more positive response than Faculties about the activities taken regarding HRM issues. Finally, some recommendations are given to improve the HRM practices which will ensure the efficient manpower management.

Introduction

Education is the passport to the future, for tomorrow belongs to those who prepare for it today. There is a proverb that Education is the backbone of any nation. A nation can't sustain into global competition without its skilled manpower. Education can convert the manpower into as skilled who are capable to meet the countries need. Different types of institutions like schools, colleges, madrasa, institutes, universities etc. play the role to make the human as a resource for the nation. A lot of people work into these organizations as input of conversion process who converts a human as human resource. So, it is important to practice the theory and concepts of modern Human Resource Management (HRM) to fulfill the people need who are working in education institutions.

At present, 41 public universities, 101 private universities and 3 international universities are operating in Bangladesh for higher education. Among the 41 public universities, 2 universities are working with affiliating in nature. These are National University of Bangladesh and Bangladesh Open University (UGC, 2018). Considering the number of students at the higher education level, Bangladesh has now achieved the fourth position in the world after China, India and Indonesia. More than 39 lakh students are enrolled into the university level (The Daily Star, 2018).

Moreover, almost all largest public universities have some affiliations with different colleges and institutions with their regular academic activities. For an example, Dhaka University, Rajshahi University, Chittagong University, Bangladesh University of Professionals (BUP) etc. have affiliations with different colleges and institutes. Before the year 1992, all of the colleges in higher

education level were under Dhaka University, Chittagong University and Rajshahi University. There were a complexity arises due to these affiliations. The academic activities of both universities and affiliated colleges were hampered due to the extra burden of affiliations. As a result, an enormous session jam has been created. To overcome from the session jam, two public universities have been established in the year 1992 called National University of Bangladesh and Bangladesh Open University. All colleges and institutions in higher education level were affiliated with these two universities. From the year 1992, all of the academic activities of the colleges and institutions at higher education are operating under the National University, Bangladesh and the distance educations are operating under Bangladesh Open University. A total of 5, 40,733 students are studying under Bangladesh Open University in every year with 1,502 affiliated centers (BOU, 2018). Recently a total of 7 affiliated government colleges of Dhaka city have been transferred from National University (NU) to Dhaka University. The purpose of this transformation is to reduce excessive pressure from NU and also ensuring quality education at college level.

NU is the largest public university of Bangladesh who works with a large number of affiliated colleges and institutions. The University has about 2,300 affiliating colleges where more than 20 lakh students are studying with different programs. NU has started its academic activities with affiliated campus i.e. off campus. NU has also started On-Campus academic activates from the year 2006. NU offers graduations and master's degree from affiliating colleges and research-based degree like Master of Advanced Studies (MAS), Advanced MBA, M. Phil and Ph. D degree from central Campus. PGD in Library and Information Science and Teachers' training program for college teachers are also providing from the central Campus. At present, NU has 78 faculties of different discipline who operates the academic and administrative activities. About 1213 non- academic Staff works into central campus.

Human Resources (HR) are the most important resources of any organizations that make the things as reality from a dream or vision. Every organization whether it is large or small, production oriented or service oriented, financially strong or weak requires efficient HR. Organization requires HR in its different level like top, mid and functional level in order to convert the vision into reality. It is said that, *A supper computer becomes workless without a superman*. Here, the super man is the employee who operates the computer. The supercomputer works as per the direction of employees. So, it can be easily understood about the significance of the employees to achieve the dream of organization. On the other hand, we know there are four factors of production like Land, Labor, Capital and entrepreneurship. This factor works as the input of any operations. Though in Management, input is considered broadly as man, machine, material, money, market and method which are also called *6M* of management. Along with this *6M,* information is also considered as the vital input in any production or services-oriented process (Griffin, 2013). If the most important resource '*Human'* is become absence or inefficient the other resources are also become as ineffective or inactive. As a result, it can be said that, the success of any organization is mainly depends on its employees.

Organization gets manpower through recruitment and selection process. A newly appointed employee suffers different types of anxiety, stress about new organization, culture and working environment. Even he may not have adequate knowledge about the organization working process. It is management responsibility to make him prepare about the organization through applying HRM functions like staffing, training and development, motivation and maintenance of Human Resource (DeCenzo, et al., 2010).

Every organization perform its tasks in order to satisfy the customer needs. These customers may be both internal and external. Internal customer means the employees of the organization who prepare the product or services in order to satisfy the external customer needs. On the other hand, the external customer means the customers or consumers who purchase the product or service from the organization in against of financial value. The most important asset of any organization is customers. Internal customer stays into inside of the organization and external customer stays into

outside of the organization (Besterfield, et al., 2004). So, to satisfy the external customer of the organization, firstly it requires satisfying the internal customers' needs.

Organization may have efficient HR. The organization may have also proper strategy to lead the manpower. But if the organization fails to implement the appropriate strategy to maintain the HR, the organization will fail to acquire and retain them. In most of the cases, unless the HR strategy is appropriately formulated and skillfully implemented, the success of the organizational strategy is at risk (Belcourt, et al., 2003). As a result, in order to acquiring and retaining the most efficient HR into workplace, organization needs to develop strategic HR plan. This will give the organization a distinguished position into competitive market.

So, from the above discussion, it is clear that university as an organization need to be concerned more about its employees. To operate the universities activities successfully, it requires preparing themselves as an efficient HR. University should apply modern Management and HRM theories regarding manpower which will help to achieve its strategic position from the competitive market.

The main objective of this study is to investigate the HRM practices basing the case of National University, Bangladesh. The study has also some other specific objectives;

1. To measure the NU performance regarding HRM functions;
2. To compare the responses of faculties and staff's perceptions regarding HRM functions;
3. To find out the existing limitation(s) regarding efficient HRM practices;
4. To suggest guideline(s) in order to overcome from the limitation(s);

Literature Review
University
A University comes from Latin word Universitas. University is an institution of higher or sometimes tertiary education and research. It also awards academic degrees in various academic disciplines. Universities typically provide both undergraduate education and postgraduate education (Wikipedia, 1911). According to Oxford University Press (2010), it is an institution of higher education offering tuition in mainly non-vocational subjects and typically having the power to confer degrees.

HRM
HRM is the process of acquiring, training, appraising, compensating employees, maintaining labor relations, health and safety and fairness concerns (Dessler, 2013). Moreover, it refers to those activities which are undertaken by an organization to utilize the HR effectively and efficiently. It is comprised of the staffing, training and development, motivation and maintenance functions. Management of human resource is the critical task of any organization on which the success of any organization depends. Because, people not buildings, make an organization successful.

Recruitment and Selection
Staffing is filling and keeping filled, positions in the organization structures. Recruitment and Selection is the special form of staffing. Both the recruitment and selection are very important for the organization success. Recruitment is the process of obtaining interested people/ applicants for the fulfilling organizations vacancies where selection refers fitting a round peg in a round hole.

Training and Development
Training helps to develop an up-to-date workforce which provides a competitive advantage over the rivals. Whatever, the success of organization depends on workforce? Training refers to a planned effort by a company to facilitate employees' learning of job-related competencies (Noe, 2013). Training develops a positive and constructive attitude among the employees towards achieving the organizational goals and objectives. Training is also important for the teachers to develop their Knowledge, Skills and Abilities (KSA). To ensure a highly motivated, creative, up to

date and productive workforce, it requires arranging training regularly which will help to achieve organization's goal (Mia, 2017).

Motivation and Maintenance

A person is not bound to do his entire level of energy towards job until he gets appropriate motivation. Motivation is the process that account for an individual's intensity, direction and persistence of effort toward attaining the goal (Robbins, et al., 2009). Motivation is the set of internal and external forces including both financial and non-financial means that lead an employee to choose a course of action.

Rewards and Compensation

Organization must attract and hire people who have certain knowledge, skills, aptitudes and attitudes. Rewards, compensation and benefits are closely related but different in meaning and applications. Compensation is the financial remuneration given by the organization to its employee in exchange for their work where reward is given to the extraordinary performance of efficient employee. On the other hand, organization provides benefits which are things of value other than compensation that an organization provides to its workers (Griffin, 2013).

Workplace Relationship

Workplace relation helps to build sound industrial relations. Industrial relations encompass a set of phenomena both inside and outside of the workplace concerned with determining and regulating the employment relationship (Salamon, 2010).

Strategic HRM

Strategic HRM is the interrelated practices, policies and philosophies that facilitate the attainment of organizational strategy (McBey, et al., 2010). In competitive era, it is the task of organization to develop an efficient workforce for the success who will be able to carry the organizational objectives. On the other hand, organization must take effective strategy to retain the efficient HR. Otherwise, key competitor may hunt the talent which is also known as *talent hunt*. Moreover, organization must attract the efficient and talent HR of competitors. Here, the practices of Strategic HRM can give an organization a competitive advancement over the rivals.

Human Resource Information Systems (HRIS)

HRIS is a software which is used to maintain and utilize the human resources of an organization in most efficient manner. It is a system which is used to acquire, store, manipulate, analyze, retrieves and distribute information regarding an organization's human resources. It is both the hardware and software based along with people, forms, policies, procedures and data. The purpose of HRIS is to provide service in the form of accurate and timely to its clients of the systems (Beulen, 2009).

Career Growth

Career is a structural property of an occupation or an organization. A final aspect of retaining human resource is career planning. Career management is a process by which individuals develop, implement and monitor career goals and strategies (Jeffrey, et al., 2011). Few people perform job in same organization. Efficient people always search best job. In this regard organization should take adequate actions to retain and attract the efficient HR.

HRM Practices

Shree et al., (2017) in their study emphasized to have separate HR department to conduct HR related function in universities. They also highlight the need for a complete revamp of HR functions of recruitment, placement, training, appraisal, compensation and employee relations, career development and motivation. HRM department will manage the functions relating to HR which will give a competitive advantage to the academic institution over the industry. Iqbal et al., (2011) shows in their study that HRM practices of public universities are relatively better than private universities.

Public university is performing better in terms of training, teamwork, employee participation and compensation. On the other hand, private university is performing better than public university in performance appraisal system. A fair recruitment is essential to ensure the most talent HR for the organization.

Job Satisfaction

Job satisfaction is basically a positive feeling of an individual about his job. Different factors are involved with employee's job satisfaction. One job which is highly satisfactory to one may not be satisfactory to other individuals.

Teachers' Job Satisfaction

Teachers are the pillars of the society, who help students to grow with the responsibility of taking their nation ahead of others. They desire security, recognition, new experience and independence (Sharma, et al., 2009). When teachers are satisfied with their job, they can perform their responsibilities with more concentration and devotion (Adhikari, et al., 2017). Teaching at the university level is a highly honorable career and academicians are always boons to their societies. The job satisfaction of academics is related to a number of variables such as demographic characters, the work itself, pay, work responsibilities, variety of tasks, promotional opportunities, relationship with colleagues and others. Academics may be simultaneously satisfied with some facets of the job and dissatisfied with others. Compensation package, supervisory support, job security, training and development opportunities, team cohesion, career growth, working conditions, organizational culture and policies are positively associated with the academics' job satisfaction (Masum, et al., 2015). Faculty member's satisfaction depends on several issues like; training facilities along with some physical facilities and distribution of courses. Kishor, et al., (2015) shows in their quantitative study that, majority of the Maharashtra State University teachers have moderate level of job satisfaction. Thi Lien, (2017) shows that salary and fringe benefits, recognition and communication have influential relationship with lecturer job satisfaction in the linear regression analysis. There is no significant difference between male and female faculty members regarding job satisfaction. As the job itself is not gender bias by nature so it does not play a crucial role for female faculty members while working under masculine culture (Ali, et al., 2009).

Non- Academic Staff Job Satisfaction

In a quantitative research Jawabri, (2017) shows that, a few factors like supervisor's support, promotion and support from colleagues positively influenced the job satisfaction of academic staff of University. Pimpong, et al., (2019), explains in their descriptive study that female staffs are more satisfied than their male counterparts. It also shows staffs are satisfied more intrinsically than extrinsically. They suggest education institute should offer annual bonus to ensure extrinsic satisfaction. Tai et al., (2014) shows in their comparative study, public university staffs are more satisfied than private university staffs. But public university staffs are less satisfied in the context of organizational decision-making and salary welfare than that off private university staff.

The above discussion shows that, a few researches are available on HRM practices in higher education field especially in university. In Bangladesh, few researches are available on HRM practices in University, but these are limit only on Private Universities. Most of the research has conducted basing only on faculties opinion. The public universities are largely depending on faculties. In National University, both academic and administrative activities simultaneously performed simultaneously because of large number of affiliating campuses. As a result, about 1,200 non-academic staffs are working in NU. That's why, it is very essential to investigate the HRM practices basing on both the faculties and the staffs which will help to ensure efficient HR into the University.

Methodology
Research Design
This study is basically a quantitative analysis. A total of 1 year has been consumed to conduct the study. Among the first four months, some literature relating to HRM has been reviewed from the secondary sources. The research gap has been found by reviewing the literature. On the basis of research gap, the objectives of the study have been determined. For the purpose of meeting objectives, some hypotheses have been formulated. On the basis of objectives and hypotheses, a questionnaire has been developed. A total of 3 months has been used to collect the primary data. Finally, using the SPSS version 23, the collected data has been analyzed. The hypotheses have been tested by T-test technique.

Sources of Data
In this study, both primary and secondary data has been used. Primary data has been collected from the sample. On the other hand, different journals, articles, books, newspapers, websites etc. have been used as the secondary source.

Instruments of the Data Collection
The primary data has been collected through a structured questionnaire. The questionnaire was both in open ended and close in nature. Likert Scale 5 Point method has been used for the purpose of close ended data. These 5 points are Strongly Agreed, Agreed, Neutral, Disagreed and Strongly Disagreed. Every option has been considered with numerical value for the analysis. The values are respectively 5, 4, 3, 2 and 1.

Population
In this study, the faculties and the officers of the University has been considered as the population. So, the total population (Faculties N_1=77 and Officers N_2=539 officers) is 616.

Sampling and Sample Design
In this study, data has been collected randomly from the population. The *Yamane Equation* has been used to determine the appropriate sample size from the population. The equation is $n\text{Y} = \frac{N}{1+Ne^2}$. Though the population is not homogenous, stratified sampling technique has been used to collect the data. Here the margin of error has been considered as 10%. The sample size is as like as

$$n\text{Y} = \frac{N}{1+Ne^2}$$

$$= \frac{616}{1+616*0.1^2}$$

=86.03 or 87

Where,
N= Total number of populations;
e= Margin of error (Assumed that the margin of error is 10%)
$n\text{Y}$ = sample?

Proportionate of the sample from two group are;

For strata with N_1= 77, we have $P_1 = \frac{N_1}{P} = \frac{77}{616}$ = .125.

So, the n_1 = n*P_1 = 87*.125 = 10.87 or 11

For strata with N_2= 539, we have $P_2 = \frac{N_2}{P} = \frac{539}{616}$ = .875

So, the n_2 = n*P_2 = 87*0.875 = 76.125 or 76

Among the 77 faculties (P_f), there are four groups like Professor (N_{f1}=7), Associate Professor (N_{f2}=11), Assistant Professor (N_{f3}=35) and Lecturer (N_{f4}=24). Moreover, there are also 3 groups from 539 officers (P_s), like Deputy Registrar (N_{s1}=142), Assistant Registrar (N_{s2}=204) and Section Officer (N_{s3}=193) or equivalent.

Proportionate of the faculty and stuffs from groups are;

Faculties

For strata with N_{f1} = 7,

Staffs

For strata with N_{s1} = 142,

We have $P_{f1} = \dfrac{N_{f1}}{P_f} = \dfrac{7}{77} = 0.09$

So, the n_{f1} = n*P_{f1} = 11*0.09 = 0.99 or 1.

By applying the same formula, the n_{f2}= 2, n_{f3}= 5 and n_{f4}= 3

We have $P_{s1} = \dfrac{N_{s1}}{P_f} = \dfrac{142}{539} = 0.26$

So, the n_{s1} = n*P_{s1} =76*0.26= 19.76 or 20

By applying the same formula, the n_{s2}= 29 and n_{s3}= 27.

Analysis of the Study

The collected data has been analyzed with SPSS version 23. The responses of the samples have analyzed both in aggregately and separately. Descriptive statistics including mean, standard deviation, standard error mean and one tail t- test have been done to measure the perception of respondents. Here, the test level is considered as 3 and the confidence level is considered as 95%. On the other hand, an independent t-test has been done to compare the perception of samples separately.

Hypotheses Development

The study has been conducted basing on the following hypotheses;

H_1:   NU has strategic HR Plan.
H_2:   NU ensures career development opportunity for the faculties and the staffs.
H_3:   NU motivates the faculties and the staffs towards achieving goals.
H_4:   NU maintains a sound relation with the faculties and the staffs.
H_5:   Faculties and staffs are satisfied about their job.

Analysis and Findings

The result shows that the average score perceived by faculties and staff of NU towards "strategic HR plan" is higher than 3 (M=3.11, SD=0.953). But the t-test suggest that this score is not significantly higher than 3 (t=1.131, p=0.261). This indicates that the hypothesis is rejected regarding Strategic HR Plan.

The result also shows that the average score perceived by faculties and staff of NU towards "career development opportunity" is lower than 3 (M=2.89, SD=1.019). But the t-test suggest that this score is significantly lower than 3 (t= -.987, p=0.326). This indicates that the hypothesis is rejected regarding Career Development Opportunity.

The result also shows that the average score perceived by faculties and staffs of NU towards "motivation" is lower than 3 (M=2.95, SD=0.922). But the t-test suggest that this score is significantly lower than 3 (t= -.421, p=0.675). This indicates that the hypothesis is rejected regarding motivation.

The result also shows that the average score perceived by faculties and staffs of NU towards "workplace relations" is above 3 (M=3.12, SD=0.922). But the t-test suggest that this score is not significantly higher than 3 (t= 1.309, p= 0.194). This indicates that the hypothesis is rejected regarding workplace relations.

On contrary, the perceived mean score of "*satisfaction about their job*" is higher than 3 (M=3.58, SD=0.905). The t-test also suggest that this average score perceived by faculties and staffs of NU significantly higher than 3 (t=5.956, p<0.01). Hence it can be concluded that the hypothesis is accepted regarding satisfaction about faculties and staff's job.

Table 1: Descriptive Statistics of the Perception of Faculties and staffs

One-Sample Statistics				
Descriptions	N	Mean	SD	Std. Error Mean
Strategic HR Plan	86	3.1163	.95324	.10279
Career Development Opportunity	86	2.8915	1.01934	.10992
Motivation	86	2.9581	.92297	.09953
Workplace Relations	86	3.1279	.90588	.09768
Faculties and staffs are satisfied about their job.	86	3.5814	.90522	.09761

Table 2: T-test

One-Sample Test						
Descriptions	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Strategic HR Plan	1.131	85	.261	.11628	-.0881	.3207
Career Development Opportunity	-.987	85	.326	-.10853	-.3271	.1100
Motivation	-.421	85	.675	-.04186	-.2397	.1560
Workplace Relations	1.309	85	.194	.12791	-.0663	.3221
Faculties and staffs are satisfied about their job	5.956	85	.000	.58140	.3873	.7755

An independent samples t-test was conducted to compare the perception of faculties and staffs regarding HRM practices of NU. The difference between the perception of faculties and staffs regarding HRM practices are presented in Table-3. Staffs showed a significantly higher positive response regarding HRM practices than faculties. The table-3 shows that, in all categories the perceived mean value of faculties is lower than 3 and lower than the staff's perception mean value. It is also noticeable that, both faculties and staff's responses mean value is lower than 3 and the std. deviation is also closely equal (SD=1.01, 1.01) for career and development opportunities. It represents that they are disagreed about career development opportunities offered by the University to faculties and staffs. Other than career development opportunities, staff's response mean is higher than 3.

Table 3: Independent T-test

Descriptions	Mean (Faculties=11)				Mean (Staffs=75)			
	Mean	SD	t	p	Mean	SD	t	p
Strategic HR Plan	2.52	0.75	-2.24	.02	3.20	0.95	-2.67	.01
Career Development Opportunity	2.48	1.01	-1.42	.15	2.95	1.012	-1.42	.17
Motivation	2.50	0.93	-1.74	.08	3.02	0.90	-1.70	.11
Workplace Relations	2.69	0.85	-1.73	.08	3.19	0.90	-1.80	.09
Faculties and staffs are satisfied about their job	2.94	0.91	-2.57	.01	3.67	0.87	-2.48	.02

$*p=0.05$

The above table shows that, the perception of faculties t value is = -2.24, p value is .02 and staffs t value is -2.67 and p value is .01 regarding Strategic HR plan. On the other hand, the perception of faculty's t value is -2.57 and p value is .01 and staffs t value is -2.48 and p value is .02 for satisfaction about Faculties and staff's job. In other cases, the p value is above 0.05. It represents there is no significant differences between the perception of faculties and staffs regarding career development opportunities, motivation and workplace relations.

Limitations of the study

A satisfied employee become as the distinguished resource for any organization. Satisfaction of the faculties and the employees varies from different issues. Moreover, HRM practices for faculties and staff may also vary. But this study has been conducted to know the HRM practices focusing the both group like faculties and staffs from some common viewpoint. So, it is one of the major limitations of the study. Though this type of study has not conducted earlier to develop the HR of the university, the researcher has focused on both faculties and staffs from some common variables. So, there is a scope to the future researcher to conduct more research on the issue focusing the both parties' needs separately.

Conclusion and Recommendations
Conclusion

Human Resources are the vital resource of any organization. Without the Efficient HR, other resources of organization like finance, technology, information and infrastructure will not work. As a result, organization needs to focus on developing efficient workforce for achieving strategic objectives. Though National University is offering education for 20,00,000 students in every, so the faculties and staff must be satisfied with their job. Otherwise, their performance will not be satisfactory to its stakeholders. A negative image will be developed in against of the University. The study found that, the performance of the university is poor regarding the application of HR plan, career development opportunities of faculties & employees, motivation, workplace relations. Specially, a gap has been found among the response of faculties and academic staffs. Organization need to focus on every needs of its manpower. Without the fulfillment of people's needs, no organization can survive in competitive society. So, University needs to think HR as competitive resource to win the competition. They need to train up their employee to satisfy the needs of its stakeholders. University need to focus more to retain the talent with their satisfaction. The authority also needs to confirm proper motivation by applying both financial and non-financial means. University should take adequate steps to convert the HR as strategic resource for the university.

Recommendations

Based on findings, the following recommendations are given;

The university authority may to focus on developing HR plan including determining HR needs, defining job description, job specification, determining appropriate ways to select the right HR and developing orientation and socialization process for newly appointed faculties and staffs.

The university authority can confirm training opportunity continually in order to update the skill of manpower into different issues which may help to employee to perform better. It will also help to perform the tasks ethically. These tasks can easily perform by Teachers Training Department of NU. The faculties of the university can develop a sound module for the purpose. University authority also needs to ensure higher education opportunities of staffs along with faculties.

The university authority needs to confirm promotion opportunity at due time. The promotion process also needs to confirm transparent and equal opportunity basis for all. Promotion need to be knowledge and experience based. The authority also needs to offer different rewards to efficient faculty or employee which can create a positive competition among others. University can apply 360^0 performance appraisal technique to get the best employees. Performance appraisal report should be given priority to promotion, transfer or any other cases.

The university also needs to confirm transfer regularly and rotationally with a specific time period which will increase the efficiency, knowledge of employees.

Each and every department need to be conscious about the problems faced by faculty or employees. They need to communicate with administration. University can arrange meeting with different department in order to address their problem. Rules and regulations need to follow equally for all.

The gap between the satisfaction among faculties and academic staff should minimize. University authority need to concentrate about the problems faced by the faculties.

University can rename the existing 'Administration Department' into as 'Human Resource Division' which main task will be acquiring, preparing and retaining the right person at right place and time. The department will arrange different program to develop and update the HR. Moreover, University can develop Human Resource Information Systems software which will provide required information regarding workforce with least time and costs.

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Evaluation of the Effectiveness of Training Programs of Private Commercial Banks in Bangladesh

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Keywords
Evaluation, Effectiveness, Training, Private Commercial Banks, Bangladesh.

Abstract
   Purpose – *The purpose of the study is to evaluate the effectiveness of training programs of Private Commercial Banks in Bangladesh.*
   Study Design- *A number of 97 bankers were interviewed to evaluate the effectiveness of the training programs which organized to increase efficiency of the bankers. Content, Competence, Tangible, Empathy and Reliability are the independent factors which were measured by 9, 7, 4, 4 and 8 Likert items of 5 points. Consistency (Cronbach's Alpha) of the items to construct the factors was more than 0.65 except for Tangible (0.543) which still represent consistency to measure the factor. Content, Competence, Tangible, Empathy and Reliability have positive impact on the effectiveness of training. However, the impact of content and competence are the significant with 95% confidence interval 0.051 to 0.537 and 0.270 to 0.785 respectively.*
   Findings- *The study finding shows that training has significant impact on the performance of bankers of Private Commercial Banks in Bangladesh. The study finding also shows that training programs of Private Commercial Banks in Bangladesh have some problems. That's why, the human resources of the Private Commercial Banks in Bangladesh could not do contribute a lot to the continuous growth and development of the banks.*
   Implications- *The practical implication of the study is that it will help the authorities of the Private Commercial Banks in Bangladesh to formulate sound training policies for the banks to provide effective training to the employees so that they can accomplish their tasks and duties effectively and efficiently.*

Complying with the disclosures required by the IFRS 7: A study on the pharmaceutical companies of Bangladesh

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Abstract

The study aiming at measuring the degree of compliance with the disclosures required by the IFRS 7 particularly by the pharmaceutical companies of Bangladesh where secondary data from the audited financial statements of the pharmaceutical companies found that most of the companies have complied with most of the disclosures required by IFRS 7. The companies could not comply with few disclosures due to various drawbacks like legal difficulties, complexities etc. The study also found that higher degree of compliance brings better true and fair views of the organizations and vice-versa. Higher degree of compliance result in better management control as well as managing fund crisis and other related issues in better ways. On the otherhand, the study further found that non-compliance with the disclosures result in corruption by the management of the organizations. Finally, the study recommends the to improve the financial performance as well as the fairness of financial representation the companies should try to better comply with the disclosures required by IFRS 7. Further research is also recommended for ensuring the highest level of compliance with the said disclosures.

Insider Ownership and firm performance: Evidence from Japanese Economy

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Keyword

Insider Ownership, Japanese Ownership Structure, Tobin's Q, Japanese Corporate Governance.

Abstract

Using a large sample of non-financial firms over the period 2004 to 2018, this paper aims to investigate the association between insider ownership and firm performance, in the Japanese settings. Unlike the inverted "U-shaped" relationship between insider ownership and firm performance that has been documented in several existing Anglo-Saxon economy relate studies; our findings report a "U-shaped" relationship. Results show that firm performance decreases, with increased share ownership by insiders, supporting the entrenchment hypothesis. Furthermore, extreme high-level insider ownership increases firm performance, supporting the convergence-of-interest hypothesis. These findings are robust to several proxies of firm performance, and to endogeneity bias. Overall, our findings are generalizable to the wider economy and have practical implications for firm ownership structure management.

Role of women entrepreneurship on achieving sustainable development goals (SDGs) in Bangladesh

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Keywords
Entrepreneurship, Women entrepreneur, SDGs, Factor analysis, Empowerment, Bangladesh.

Abstract
In recent years, the rise of women entrepreneurs and their participation in the growth of the national economy is crucial for a developing country like Bangladesh. Since women are nearly half of the total human resource in Bangladesh, it is obvious that their participation in the financial sector can make a huge difference in the economic expansion of the country. Nowadays, women have become much sincere than before regarding their lives and rights. Therefore, the number of women entrepreneurs has been increased remarkably during the last couple of decades. Women have now started to contribute to the economic growth by their distinctive jobs. They have altered their typical roles of housewives into a substantial business figure having enough ability and enthusiasm to run a business alone and to face any of its threats in order to make a profit out of it. These women are also taking several practical training and specialized degrees to keep pace with the market need. Therefore, they are thriving rapidly as successful entrepreneurs and discovering new opportunities of economic participation. Considering the aforementioned information, the purpose of the study is to seek the motivational factors that encourage women to become entrepreneurs and to explore how their entrepreneurship skill can contribute to the SDGs. The study has been conducted by using convenience sampling technique on 203 women entrepreneurs of different districts of Bangladesh. Through factor analysis, the study has found several factors that lead women to be entrepreneurs and the major challenges faced by them in Bangladesh. The paper provides better insight about how women entrepreneurs are contributing significantly to achieve SDGs.

Introduction

In recent years, women entrepreneurship or access of women to the business world is the most rapidly growing economic phenomenon in developing nations like Bangladesh. As a part of national development initiatives, these countries are highlighting enormously the issue of women involvement as entrepreneur and giving emphasis on the continuous increase of it. Today, it is evident that the contribution of women entrepreneurs' is significant to nation's economic development, employment generation, abating gender discrimination, poverty reduction and increasing women empowerment. On the other hand, recently, sustainability becomes more imperative in the economic development process. The UN finally granted 17 Sustainable Development Goals (SDGs) in September 2015.

Bangladesh is moving rapidly towards achieving middle-income nation status by 2021. The country needs a per capita income of US$ 3500. During the period of 2008 to 2018, a noteworthy success is achieved in Bangladesh on the aspects of female and children development initiatives, particularly employment generation and empowerment and decision making of women. At present, Bangladesh has appeared as a leading example for other developing nations. These achievements in

the socio-economic sectors have fostered the scope of achieving sustainable development goals particularly in reducing gender inequality. In order to achieve gender equality for women empowerment in line with the targets set in the United Nations Sustainable Development Goals (SDG), active participation of women in the development process is needed.

A woman entrepreneur is a woman who initiates or inherits a business, alone or with groups, and is ready to undertake all kinds of responsibilities and risks associated with entrepreneurial activities such as financial, administrative and social. Women entrepreneurship in Bangladesh is a daunting trend as women fall behind economically and socially. The major obstacles for being a woman entrepreneur in our country are illiteracy, lack of awareness, inequality, deprivation, lack of capital and financial support, and non-cooperation from the male partners etc. In total of 6.35% labor force participations, only 2% women are engaged in labor force. In Bangladesh, women's per capita income is just US$ 2500. The scope of education for women is noticeably less than male.

Bangladesh cannot achieve its long-term development goal without a meaningful and active participation of women who are the half of the total population, a dynamic and sustainable economy is not possible. The government has taken necessary initiatives in national policies to facilitate women entrepreneurship development.

The growing human population of Bangladesh entails the shield of country's resources which can be achieved through smooth relations between people and economic activities. So, they should break social stigma to join economic activities as well as ensure gender equality. So, Government should stimulate women participation as entrepreneur to achieve macro-economic objectives as well as SDGs. It could be expected that further initiatives will pave the way to the emergence and development of women entrepreneurs in Bangladesh in an ideal way.

Literature Review

Costanza, Hrund and Angela (2003) suggested that women entrepreneurship boosts a nation's economic growth and creates employment opportunities. Many studies suggested the interrelation between women entrepreneurship and women empowerment. Empowerment is a process of transition from a state of powerlessness to a state of relative control over one's life, destiny, and environment. This transition can manifest itself in an improvement in the perceived ability to control, as well as in an improvement in the actual ability to control (Sadan, 1997).

According to Nimalathasan (2010), entrepreneurship can make women more personally and economically empowered. According to Nawaz (2009), women entrepreneurship and women empowerment are complementary to each other. Women entrepreneurs tend to be more empowered in social, economic and cultural fields. Women involvement in entrepreneurial activities has increased their influence and exposure to decision making both within and outside the family.

Adki (2014) perceives women entrepreneurship as a very crucial factor for achieving sustainable economic growth, social development and women empowerment. Women entrepreneurs endure inequality & skepticism of the society (Jahanshahi & Pitamber, 2010). Study suggests that, elimination of disparities from legal, social, educational, financial and other sectors will alleviate the gender gap for women entrepreneur. This can eventually assistance in achieving Sustainable Development Goal (SDG 5) that addresses all forms of discrimination against women and girls (Meunier, Krylova & Ramalho, 2017).

Many studies have tried to investigate the factors that affect women entrepreneurs. According to Nilufer (2001), socio-cultural factors in developing countries instigate women's decision to become an entrepreneur. A study by Hossain, Siddique & Jamil (2018) concluded that economical, psychological, knowledge and skills, family, and legal & administrative factors, notably affect women involvement as entrepreneur in Bangladesh. Another study by Aktaruddin (1999) revealed that freedom of work and desire for higher social status significantly induce women to involve in entrepreneurship. The study also identified lack of entrepreneurial skills, inadequate startup finance, gender inequalities, inadequate information, lack of self-confidence, dilemma of balancing between

family and entrepreneurial activities, and anxieties about societal acceptance as major challenges encountered by women entrepreneurs. Naslima & Alam (2014) indicated low literacy rate of women, ignorance of new technology, inadequate training, insufficient government support are the key issues confronted by women entrepreneurs.

A lot of studies attempted to find the factors that inspired women to get involved in entrepreneurial activities, but no endeavor has been done to investigate these factors from Bangladesh perspectives. The present study examines the factors that motivate women to be entrepreneur from the social and cultural perspective of Bangladesh. Besides, it also tries to decipher why and how women entrepreneurship is significant in achieving Sustainable Development Goals (SDGs) especially the Goal 5. No previous study has been done to explore the contribution of Bangladeshi women in attaining the goals of SDGs.

Objectives of the study

Objectives of the study are:
1. To determine the factors that motivating women to become entrepreneurs.
2. To identify how women entrepreneurship supports in achieving Sustainable Development Goals (SDGs)

Conceptual Framework
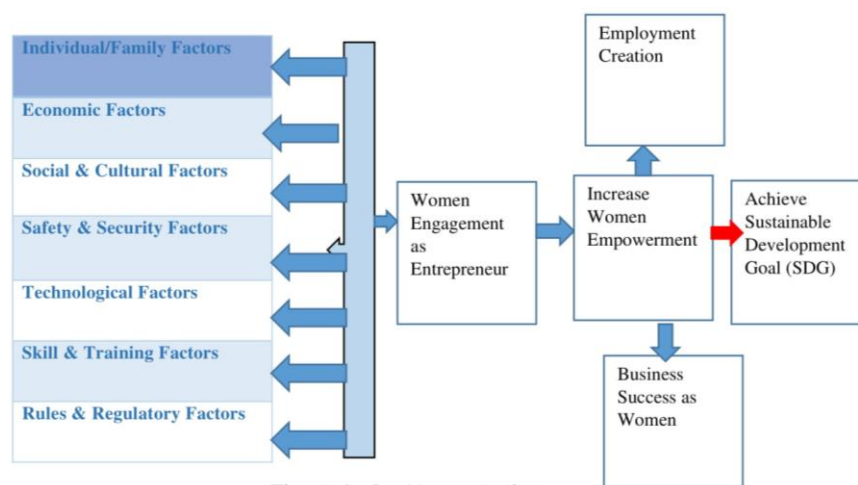
Figure: Author(s) construction

Individual Factors

Family is a big obstacle for a woman to be a successful entrepreneur. Most of the women face difficulties due to their personal issues (family support, dual role, time management, travelling). It has been recognized that family support is important factor behind the success of women entrepreneurs. In the study, different respondents shared different views. Entrepreneurial activities and involvement in business improve their living standard, women can contribute their income for family purpose, and again women who received training can maintain and perform well in their business. Therefore, each factor has individual effect on their involvement.

Economic Factors

Economic factors are the factors that affect the business as well as entire economy. Economic issues, particularly economic liberty is significantly influenced entrepreneurial decision. Access to finance is the major stimulate for women to become entrepreneur. Inadequate access to credit creates enormous restraints for women that influence their engagement as entrepreneur reversely. Due to lack of appropriate knowledge, skills, trainings, networking and experiences, women are often unable to produce and market their product. Women have often not been exposed to the

international market, and therefore, lack knowledge about what is internationally acceptable. (UNECE, 2004).

Social & Cultural Factors

Variables that arise from culture, environment, community, family, organization, society, government, state, media, technology, religion, ideology, language, mobility, communication are considered as social factors. It influences individual's attitude and actions in a certain way. Gender inequality is one of the vital issues that affected women involvement as entrepreneur in society. Gender discrimination in entrepreneurial activities is a common phenomenon that constraints women to be a successful entrepreneur. Women are affected by socio-cultural complexities to involve in entrepreneurial activities (Nilufer, 2001).

Security Factors

Security factor mostly refers to the protection from aggressive forces. It is very difficult for women to be entrepreneur without any securities. Conflict, unfavorable business environments (legal and regulatory) etc. hinder women involvement in business.

Technological Factors

Technological factors are being used for evaluating available changes with respect to technological capabilities. Technological factors have great impact on entrepreneurial decision. Now a days, the success of business mostly depends on technological factors than previous. In modern society, social networking (Facebook) and modern financial support (mobile banking) are popular technological tools for successful business. In a high rivalry marketplace, women must compete with male who have immense experience and capability to adopt the technological integration and apply in their business. Therefore, it is very difficult for the women to race with them. By acquiring adequate knowledge and development training women can develop them as expertise.

Skills & Training Factors

Factors that related to knowledge, training, education etc. are treated as skill factors. Knowledge, skills, training and experience have great impact on women entrepreneurial decision. Women have less knowledge of how to deal with the governmental bureaucracy, fewer enterprise contacts and less bargaining power, all of which further limit entrepreneurship development (Mahbub, 2000). Knowledge proficiency, expertise and strong networking are essential to enter a new market. With appropriate training and experiences women can easily get involved in the entrepreneurial activities.

Rules & Regulatory Factors

Government policies, business policies, license, administration, production and sales services rules and regulations have great impact on women participation as entrepreneur in entrepreneurial activities. Women involvement as entrepreneur is also affected by Government grants, subsidy etc. Women's insufficient access to information limits their knowledgeable input into policymaking. Majority of women have little access to policymakers (UNECE, 2004). Accessible and flexible rules and regulations for women for being entrepreneur can increase their participations in the market.

Methodology of the Study

Sample & Instrument

In this study we have used both quantitative and qualitative approach. For quantitative approach along with descriptive statistics, inferential statistical techniques such as, Factor Analysis and Correlation Analysis are used to analyze the data. For qualitative approaches, it employs Focus Group Discussion (FGD). The rationale for choosing the focus group discussion to generate data should first be explained. The achievement of SDGs is a new challenge for Bangladesh as it comes into action from January 1, 2016. Sustainable development is a holistic approach to ensuring the well-being of the community's people. On the other hand, women empowerment through

entrepreneurship is a prospective sector because entrepreneurs not only create employment for themselves but also create jobs for others. So, it reduces gender inequality as well as poverty. Empowerment of women is also necessary for the betterment of society, holding the hands of innovation and economic development. The correlation between women entrepreneurship and SDGs should be discussed first. FGD allows the participants to make comments, provide valuable insights and interact with other and rethink the issues. The present study focused on the topic of goal 5 and tries to prove women entrepreneurship as a tool to achieve the goals. As the topic is pliable to all, the discussants are free to participate. The discussion may pave the way to assess the role of women entrepreneurship to achieve some specific goals.

Primary data is collected through personal interview from 203 respondents. The survey has been conducted among the women entrepreneurs with the assistance of BBA students of Daffodil International University from January 2019 to May 2019.

By using SPSS 16.0, collected data from questionnaires have been analyzed by using various statistical tools.

Design of FGD

The present study organizes five groups comprising ten members in each. The members are selected by both random and convenient basis. All the respondents are women who are involved in various business. Facebook as a social media helps to find out them. In five groups, there are nine members who are physically absent, but they join with Viber. In the five group twelve entrepreneurs are from outside Dhaka. These FGD of five group are conducted from March to May of 2019.

Results and Discussions
Quantitative Analysis
Demographic, Business Related and Other Profile

From table 1, it is said that out of total women around 29% is in age group 25-30 and only 6.4% have age more than 40. We can see unmarried women are more unlikely to be entrepreneurs. Table also shows that qualified women are more involved as entrepreneurs. Maximum percentage of income is between 30k and 45k.

Table 1: Frequency distribution of socio-economic status

Age (years)	Below 25	16.3
	25– 30	29.1
	30 – 35	33
	35 – 40	15.3
	40+	6.4
Marital status	Single	10.3
	Married	89.7
Level of education	Primary	12.3
	Secondary	27.1
	Graduation	44.3
	Post-Graduation	16.3
Income (per month)	<15k	3.4
	15k-30k	23.6
	30k-45k	29.2
	45k-60k	19.1
	60k-75k	17.7
	>75k	6.9

From table 2 from our respondents, majority of the women are doing clothing business and second most popular business is cosmetics business. 43.8% use internet as their marketing tool for business. Around 85% said that current business is their 1st business.

Table 2: Frequency distribution of business-related information

Business type	Cosmetics	36
	Dress	40.9
	Healthcare	2
	Homemade food	4.4
	Home appliance	6.9
	Others	9.9
Marketing tools	Family & friend's network	37.4
	Internet	43.8
	Direct marketing	18.7
Business type	Yes	84.7
	No	15.3

Other than demographic and business-related information. Almost 17% get good family support as their success factors. On the other hand, women face some challenges when they try to become an entrepreneur. In this study, most of the respondents (17.7%) realized that they need more business support (Table 3). Women business owners face the dual responsibilities of growing a business and raising a family.

Table 3

		Percent
Challenges	No problems encountered	4.4
	Social barrier	9.4
	Difficulty in raising start-up business	9.9
	Lack of information	10.3
	Difficulty in finding right contacts	5.9
	Limited access to business support	17.7
	Limited access to funding	16.7
	Lack of entrepreneurial skills	15.8
	Lack of language skills for foreign markets	3.9
	Difficult to combine family and work life	5.9
Success Factors	Good family support	16.7
	Appropriate qualification	22.7
	Self-determination and will power	10.3
	Own inner drive	15.8
	Vast social network	21.2
	Got right opportunity at the right time	4.9
	Satisfactory government support	8.4

Reliability & validity Test

According to Sekaran (2000), the reliability test is conducted for ensuring the consistency or stability of the items. The measurement of reliability showed through Cronbach's Alpha (α). The result of reliability test from this research indicated that the Cronbach's alpha coefficient is .851 which is acceptable.

Validity is how far we calculate the right thing or not in the questionnaire that used the data collection tool. The KMO "represents the ratio of the squared correlation between variables to the squared partial correlation between variables" (Field, 2009). Factor analysis was suitable for the study because the value of KMO in the present study is 0.772 (between 0.5 and 1.0). The result of Bartlett's Test of sphericity showed that the value of Approx. Chi-Square is 3.554E3 that is large enough and the value of Sig is 0.000 (which is less than 0.05) in which indicated that the data are suitable for data analysis.

Factor Analysis

In this study, only the first six factors will be retained. From the output of communalities almost 90% of the variance in "never faced unfavorable legal and regulatory environments" is accounted for, while 77.5% of the variance in "Mobility" is accounted.

Based on thumbs of rule, this study retained in six factors that explaining 72.9% variation of entrepreneurship of woman. In other words, six factors are explaining for 24 variables. In Scree plot (figure 1 in Appendix) for this study, there is a visible elbow or breakpoint downward after six factors. Table 2 represents the rotated factor loadings under varimax rotation. The idea of rotation is to reduce the number factors on which the variables under investigation have high loadings. All factors are revealed that owes 0.5 0r more factor loadings. These factors can be used as variables for further analysis.

Table 4: Rotated Factor loadings

Factors	Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
Individual Factor	Family assistance	.604	.068	.055	.282	.128	.435
	Business improve quality of family life	.146	.661	.110	.314	.262	.097
	Specific budget for the enterprise	-.110	.225	.226	.297	.630	.181
	Sometimes business income used for family needs	.458	-.087	-.331	.218	-.309	-.526
	Received business training to start, maintain and/or improve my business	.435	.356	-.010	.550	.244	.229
Economic Factor	Access to loan and finance	.048	.759	.244	.091	.308	.142
	Access to markets	.041	.135	-.035	-.137	.854	-.161
	Access to information and networks	.191	-.063	.171	.730	-.041	-.072
Social Factor	Positive attitude of society	.880	.102	.127	-.002	.075	-.035
	Desire for social interaction	.768	.118	.100	.302	.043	.095
	Not affected by gender inequality	.654	-.122	.480	-.016	.011	.020
	Mobility	.196	.390	.226	.528	.360	-.352
Security Factor	Peace area have influenced to become women entrepreneur	-.082	.560	.206	.524	-.005	.284
	Never faced unfavorable legal and regulatory environments	.926	.059	.172	.049	-.004	.001
	Tax levied on the business is reasonable	.115	.228	.136	.156	.435	-.707
Technological factors	Social networking (Facebook, Instagram)	.049	.250	.655	.372	-.028	-.039
	Modern financial support (mobile banking)	.234	.185	.661	.005	.328	-.166
Acquired skill and training	Business related studies	.282	.159	.183	.097	-.013	.715
	Unable to find another job	.659	.572	-.014	.161	.071	.014
	Entrepreneurship can be taught, or at least encouraged by entrepreneurship education	.141	.802	.070	-.214	.037	-.289
	Access to networks of advice and assistance was there	.143	.301	.761	.048	-.107	.196
	Government bodies support	.324	-.195	.690	.210	.215	.256
	Proper training about the pertinent business	.446	.219	.059	.336	.436	-.217
Rules and regulatory factors	The business registration procedure is very easy	.923	.086	.123	.042	-.063	-.036

Source: Developed for this research

The factor loading of all items are above 0.5, which verified the convergent validity of the data.

Factor 1 represents highest factor loadings out of 6 factors that explain 32.095 percent variation. Out of 24 variables, it coincides seven variables- family support (0.604), positive attitude of society (0.880), demanding job for woman (0.768), not affected by gender inequality (0.654), never witnessed

with unfavorable legal and regulatory environments (0.926), unable to search another job (0.659) & easy access for registration (0.923).

Factor 2 holds 45.605 percent variation whereas it consists of five variables-improving quality of life (0.661), accessing financial support through loan and finance (0.759) , peace area have influenced to women entrepreneurs (0.560), unable to search another job (0.572) and need of entrepreneurship education (.802). These all high loadings indicate for support from finance or training.

Factor 3 coincides four variables- Social networking (.655), Modern financial support (.661), attached with various network (.761) and support from Government bodies (.690).

Factor 4 also accords four variables like business training, access to information and networks, mobility and peaceful working environment.

Looking at the table above, we can see that specific budget and easy access to market are substantially loaded on Factor (Component) 5. Finally, last factor concurs one variable named business related studies .715.

Pearson Correlation Coefficient Analysis

Pearson correlation coefficient analysis result has been represented in Table 1 in appendix. From the result, most variables show positive correlations. The highest r value of the Pearson correlation is 0.933, which represents the significance correlation between "easy business registration procedure" and "favorable legal and regulatory environments". There is a significant positive correlation between dependent variable "role on SDG" and independent variable "improved quality of life due to business". Other positive correlation between "role on SDG" and "gender equality".

Qualitative analysis

Content Analysis and Findings of the Study

Gender equality which is considered as an influencing factor of women empowerment. It also occurs on the basis of race, culture, politics, nation and economic situation differently. Although at the individual level, men and women are subject to gender discrimination, discrimination against women has become a global problem. Therefore, achieving sustainable development is dependent on ensuring women's empowerment for equality and promoting gender equality. And women entrepreneurship is the way to make women economically empowered. Economic involvement of women and their ownership and control of productive resources stimulate growth, help overcome inequality, reduce disparities, and increase the food, education, and attendance of children at school. So, an improved livelihood for women will come through their active and true participation in entrepreneurship.

According to BBS, LFS, 2016, only around 12 percent has emerged as entrepreneurs. According to Bangladesh Labour Force Survey 2017 conducted by Bangladesh Bureau of Statistics (BBS), women represent almost half of the population but labor force participation rate for women is only 36.3% (Ministry of Finance, 2018).Women constitute only above 10% of the total number of entrepreneurs in the country (Ministry of Finance, 2017). An estimated 0.43 million women entrepreneurs own and operate businesses accounting for 5.9 percent of the total entrepreneurs in the country (Economic Census, 2013).

The 2010 HDR introduced the Gender Inequality Index (GII), which reflects gender-based inequalities in three dimensions –reproductive health, empowerment, and economic activity. Bangladesh has a GII value of 0.542, ranking it 134 out of 160 countries in the 2017 index.

Women entrepreneurship is a prospect to achieve the goal 'gender equality'. As various scope can be created, several principles should be embedded in all strategic plans, infrastructural projects can be undertaken, more businesses can be started, so women will become economically empowered and gender equality will foster. In this regard, the groups are asked how this goal (gender equality) can be achieved by 2030 involving more women in business. The opinions are summarized in the following table.

Table 5: Opinions and Tentative Results from FGD

Group No.	Opinions	Tentative Results
1	Engage at least one member of a poor family in Entrepreneurship	Creating assets and economic empowerment of poor families. Poverty alleviation
2	Favorable environment	Boosting up of women involvement as entrepreneur.
3	Emphasis upon training.	Skill development and practical learning.
4	Mentorship framework needs to be developed for entrepreneurs	They can get appropriate guideline to become an entrepreneur
5	More social safety nets should be provided to all areas of the country.	Women involvement as entrepreneur at national level.
6.	Equal opportunity for men and women	Encourage women to become entrepreneur and increase economic empowerment of women.

The discussants suggest that improved livelihood for women will come through their active and true participation in entrepreneurship. Because entrepreneurship is such way that entrepreneurs not only create employment for themselves but also create jobs for others. In this way unemployed women get employment as well as gain economic empowerment. Involvement of women in business can assist to reduce gender inequality, to improve women's decision-making capacity as well as economic empowerment. As the gender inequality rate is high in rural areas, the suggestions are helpful for rural areas. The discussants also emphasize women's training on pertinent business. Again, there is challenge of poor people or women stay outside the capital. Focus should be given not only urban areas women but also rural women. Women entrepreneurship is the way of women empowerment which will reduce gender inequality and help to achieve goal no 5 of SDGs. During the FGDs, women have mentioned that if they can work hard and get supports from her family particularly from husband for their work, they become more successful in their endeavor. So, entrepreneurial ability (by developing and managing a business) will assist to achieve women's economic independence, to increase economic empowerment, to reduce gender discrimination, to resolve poverty by building assets and to enhance the well-being of both women and their families.

Conclusion

The purpose of this investigation was to identify the factors affecting women's involvement as entrepreneurs. Women's entrepreneurship is not just a source of income, but also a way to achieve SDGs through ensuring gender equality. There are several factors that are important tools to motivate women as entrepreneurs. These are strong family support, positive social attitude, less gender discrimination, adequate training, government support, favourable legal and regulatory environments, good social networking, easy registration procedures, proper financial and loan support and easy access to market etc. On the other hand, social barrier, lack of information, limited access to business support, limited access to funding, lack of entrepreneurial skills are the major challenges faced by women when they decide to become entrepreneur. Enhanced women's wellbeing would come from their successful and sincere participation in entrepreneurship. It will also pave a pathway to achieve SDGs by ensuring gender equality and women empowerment.

Limitations of the Study

There are few limitations in our study. First, participants did not respond properly. Some illiterate and less educated women are found as entrepreneur, but they were not quite able to understand the depth our questionnaire and could not participate in group discussion spontaneously. The study covers short area in Bangladesh due to time constraints, therefore rural area coverage was important. In this study, a few factors are emphasized which will help to create more women entrepreneurs, but still many factors are involved with this phenomenon which are not considered in the study.

Recommendations
1. Women's empowerment principles should be implemented in all strategic plans for achieving the SDGs.
2. A mentorship framework needs to be developed for young entrepreneurs.
3. Digitization of business process and use of technologies should be ensured for women.
4. Flexible funding and sponsorship opportunities should be provided for women entrepreneurs.
5. Investment should be done in linking innovative products to the mass market for ensuring sustainability.
6. Additional emphasis should be given on special and vocational training of women. More entrepreneurship institutes and training center should be established for this purpose.

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Appendix: Table 1: Pearson correlation coefficient

		FA	QFL	BUD	BT	LAF	ACM	I&N	PAS	DSI	NGI	Mo	PA	L&R	SN	FS	std	Job	Edu	Net	Gov	Reg	RSDG
FA	PC	1																					
QFL	PC	.321**	1																				
BUD	PC	.167*	.368**	1																			
BT	PC	.546**	.478**	.366**	1																		
LAF	PC	.169*	.612**	.421**	.436**	1																	
ACM	PC	.008	.244**	.359**	.173*	.305**	1																
I&N	PC	.227**	.271**	.081	.383**	.109	.003	1															
PAS	PC	.541**	.208**	.021	.422**	.141*	.085	.192**	1														
DSI	PC	.607**	.266**	.164*	.561**	.137	.003	.242**	.647**	1													
NGI	PC	.432**	.088	.065	.288**	.107	-.018	.172*	.541**	.565**	1												
Mo	PC	.224**	.508**	.443**	.433**	.448**	.350**	.453**	.287**	.364**	.107	1											
PA	PC	.243**	.459**	.393**	.497**	.536**	-.101	.185**	.042	.301**	.003	.412**	1										
L&R	PC	.549**	.201**	-.025	.427**	.128	.033	.275**	.849**	.730**	.572**	.324**	.020	1									
SN	PC	.229**	.327**	.245**	.384**	.297**	.000	.266**	.188**	.255**	.255**	.342**	.402**	.144*	1								
FS	PC	.124	.338**	.246**	.222**	.403**	.267**	.157*	.351**	.282**	.404**	.395**	.262**	.334**	.442**	1							
Std	PC	.413**	.207**	.162*	.338**	.264**	-.038	.130	.205**	.315**	.205**	.002	.321**	.319**	.184**	.093	1						
job	PC	.415**	.539**	.133	.607**	.576**	.162*	.290**	.635**	.532**	.339**	.443**	.287**	.649**	.187**	.291**	.284**	1					
Edu	PC	.009	.421**	.164*	.209**	.484**	.252**	-.101	.207**	.179*	.054	.345**	.189**	.152*	.257**	.197**	-.034	.454**	1				
Net	PC	.302**	.302**	.251**	.150*	.381**	-.041	.229**	.215**	.230**	.418**	.329**	.353**	.323**	.470**	.379**	.409**	.229**	.246**	1			
Gov	PC	.336**	.165*	.331**	.304**	.223**	.057	.299**	.333**	.357**	.526**	.235**	.138	.418**	.478**	.451**	.375**	.247**	-.166*	.479**	1		
Reg	PC	.498**	.209**	-.092	.410**	.124	-.007	.263**	.841**	.689**	.566**	.285**	.023	.933**	.145*	.298**	.287**	.636**	.181**	.255**	.358**	1	
RSDG	PC	.003	.235**	.348**	.232**	.322**	.200**	-.248**	-.013	.093	.391	.538	.068	-.042	.028	-.061	.069	.153*	.214**	.055	.023	-.023	1

Note: ** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05

FA- Family assistance, QFL - Business improve quality of family life, BUD- Specific budget for the enterprise, BT- Received business training to start, maintain and/or improve my business, LAF- access to loan and finance, ACM- access to markets, I&N- access to information and networks, PAS- Positive attitude of society, DSI- Desire for social interaction, NGI- Not affected by gender inequality, Mo- Mobility, PA-Peace area have influenced to women entrepreneurs, L&R- never faced unfavorable legal and regulatory environments, SN- Social networking, FS- Modern financial support, Std- business related study, Job- could not find another job, Edu- entrepreneurship can be taught, or at least encouraged by entrepreneurship education, Net- access to networks of advice and assistance was there, Gov-Government bodies support, Reg-easy business registration process, RSDG- Role in SDG

Shariah governance in Islamic Banks: A systematic literature review

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Abstract
Despite large growth rates worldwide and rapid increases the importance of Islamic banking, research in this arena is still in emerging level. Following Islamic shariah principles are the bases of Islamic banking. The shariah governance requires additional level of governance as it is concerned with religious aspects. Islamic banks are struggled to maintain the fundamentals of shariah principles as they must meet other regulatory guidelines and adapt with ever changing customer demand. Due to the rising importance of Islamic banking, this paper aims to systematically analyze the existing literature on shariah governance in Islamic banks. A sum of thirty-eight academic papers were reviewed in the time period from 2014-2019 and extracted from prominent databases by taking a systematic approach to literature reviews. This systematic review identified the current practices, issues, and challenges of shariah governance in Islamic banks. In addition, this review also explored further research possibilities. This study could be resourceful to the researchers and experts to identify the current trends of shariah goverance, particularly the issues covered. It would allow them to assist a better insight and understanding of recent developments in this field and would also help Islamic banking industries maintaining successful shariah governance if they can collaborate with suggested future research areas.

Comparative performance of public and private sector banks using data envelopment analysis, India

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Keywords
Banks, Data Envelopment Analysis, Decision Making Units, Efficiency, Efficiency Variation and Peer Entities

Abstract
Data Envelopment Analysis (DEA) is a data-oriented approach for evaluating the performance of a set of peer entities called Decision Making Units (DMU's) which convert multiple inputs into multiple outputs. Recent years have seen a great variety of applications of DEA for use in evaluating the performance of many kinds of entities engaged in many different activities in many different contexts in many different countries. The present study makes use of DEA models to study the efficiency variation among 42 Indian Commercial Banks in which 21 are Public and 21 are Private sector banks. This study uses the data on three DEA inputs and the three DEA outputs. The DEA inputs are Number of Employees, Interest Income and Other Income. The DEA outputs are Deposits, Investments and Advances. The data on these variables are collected from Reserve Bank of India Bulletin (2017-2018). From the analysis it is evident that maximum number of public sectors banks are efficient compared to private sector banks, and all the inefficient banks should follow the practices of efficient banks.

1. General Introduction
In judging the performance of a production unit, one commonly examines whether the unit is productive efficient. The Data Envelopment Analysis is a linear programming-based technique for measuring the performance efficiency of organizational units which are termed as Decision Making Units. This technique aims to measure how efficiently a decision-making unit uses the resources available to generate a set of outputs. This method has been successfully employed for assessing the relative performance of set of firms that uses a variety of identical inputs to produce a variety of identical outputs.

Generally, the performance of a DMU is assessed with DEA and is obtained by using the concept of efficiency which is the ratio of weighted sum of outputs to a weighted sum of inputs. Efficiencies obtained by using DEA are relative to the best performance of a virtual DMU. The best performing DMU is assigned an efficiency score of unity and the performance of others varies between zero and one.

The DEA is a mathematical programming technique that finds number of practical applications to measure the performance of similar units, such as a set of hospitals, a set of schools, a set of industries etc. Thus, DEA is a methodology based upon an interesting application of linear programming technique and it was originally developed for performance measurement.

1.1 Efficiency Measurement Concepts
i) Efficiency: The basic efficiency measurement used in DEA is the ratio of total outputs to total inputs which is given by

$$Efficiency = \frac{Total\ outputs}{Total\ inputs}$$

ii) Pure Technical Efficiency: The Pure Technical Efficiency measures how a DMU utilizes the resources under exogenous environments; a low PTE implies that the DMU inefficiently manages its resources.

iii) Scale Efficiency: It indicates that output at scale that maximizes profits for a firm and where capital and infrastructure can be set to their profit maximizing levels. Scale Efficiency is the potential productivity gain from achieving optimal size of a firm.

iv) Overall Technical Efficiency: The two measures say Pure Technical Efficiency and Scale Efficiency are then combined to provide a measure of Overall Technical Efficiency.

1.2. Input Oriented Measures

Farrell (1957) illustrated his ideas using simple example involving firms which use two inputs $(X_1$ and $X_2)$ to produce a single output (Y), under the assumption of constant returns to scale.

1.3. Output Oriented Measures

Let us consider the case where production involves two outputs $(y_1$ and $y_2)$ and single input (x_1), under the assumption of constant returns to scale.

The output and input oriented measures will only provide equivalent measures of Technical Efficiency when constant returns to scale exists. But will be unequal when increasing or decreasing return to scale present.

1.4 The Constant Returns to Scale (CRS) Model

Assume there is data on K inputs and M outputs on each of N firms or DMUs as they tend to be called in the DEA literature. For the ith DMU these are represented by the vectors X_i and Y_i respectively. The K x N input matrix X, and the M x N output matrix Y, represent the data of all N DMUs. The purpose of DEA is to construct a non-parametric envelopment frontier over the data points such that all observed points lie on or below the production frontier. For the simple example of an industry where one output is produced using two inputs, it can be visualized as several intersecting planes forming a tight-fitting cover over a scatter of points in three-dimensional space. Given the CRS assumption this can also be represented by a unit isoquant in input/output space.

1.5 The Variable Returns to Scale (VRS) Model and Scale Efficiencies

The CRS assumption is only appropriate when all DMUs are operating at an optimal scale (i.e. one corresponding to the flat portion of the LRAC curve). Imperfect competition, constraints on finance, etc. may cause a DMU to be not operating at optimal scale. Banker, Charnes and Cooper suggested an extension of the CRS DEA model to account for variable returns to scale (VRS) situations. The use of the CRS specification when not all DMUs are operating at the optimal scale will result in measures of TE which are confounded by Scale Efficiencies (SE). The use of the VRS specification will permit the calculation of TE devoid of these SE effects.

1.6 DEA's Advantages

i. DEA can handle multiple inputs and multiple outputs and they can be measured in different units. It can handle multiple inputs / outputs to generate a set of weights to each input / output.
ii. DEA provides a single comprehensive measure of performance.
iii. It doesn't assume any specific functional form relating to inputs & outputs.
iv. DEA provides valuable information for improving the less efficient DMUs. For each inefficient DMU, DEA also provides a peer best practice group of reference purposes.
v. DEA cannot support zero output values.
vi. The sources of inefficiency can be analyzed and quantified for every evaluated unit.
vii. No need to explicitly specify a mathematical form for the production function.

1.7 DEA Disadvantages

DEA has fewer limitations than other performance measurement approaches in the choice of input and output variables. The efficiency measure obtained by DEA is sensitive to the combination of inputs and outputs.

i. Application of DEA requires solving a separate linear program problem for each DMU. Hence, the application of DEA to various problems that have many DMUs can be computationally intensive. However, this is not a very serious problem, considering the computational power of present-day computers, and the number of DMUs that are considered in normal DEA problems.

ii. Since DEA is an extreme point technique, errors in measurement can cause problems. DEA efficiencies are very sensitive to even small errors.

iii. DEA is good at significant

iv. Estimating relative efficiency of a DMU but it converges very slowly to absolute efficiency. In other words, it can tell us how we are doing compared to our peers but not compared since a theoretical maximum.

v. Since DEA is a non-parametric technique, statistical hypothesis tests are difficult.

vi. Since a standard formulation of DEA creates a separate function for each DMU, large problems can be computationally intensive.

vii. As efficiency scores in DEA are obtained after running several LP problems, it is not easy to explain intuitively the process of DEA for the case of more than two inputs and outputs to a non-technical audience.

viii. DEA has been designed to compute efficiency scores only when one or more inputs and one or more outputs are used for the analysis. It would be better if the methodology has the flexibility to allow for one or more or even nil outputs or inputs for performance evaluation.

ix. A second problem with DEA is the way in which efficiencies are calculated. The values of weights of inputs and outputs are chosen (by the methodology) as the optimal value of LPP (Linear Programming Problem) for each DMU. They are not considered physically significant in the DEA literature.

2. Literature Review

In a relatively short period of time, DEA has grown into a powerful quantitative, analytical tool for measuring and evaluating performance of a Decision-Making Units (DMUs). The DEA has been successfully applied to a host of different types of entities engaged in a wide variety of activities in many contents worldwide.

DEA was first applied by Sherman and Gold (1985) for assessing the efficiency of bank branches. It is a tool for evaluating relative efficiency since it first identifies banks efficiency frontier and then compares with other banks. It allows ranks for banks according to their efficiency scores and to single out driving forces governing efficiency.

In banking industry, DEA model is preferable to econometric approach of efficiency measurement because of its advantages such that it can simultaneously analyze several inputs and outputs. Production in the banking industry often involves multiple inputs and outputs. It does not require any assumptions about the functional form of technology, and it calculates a maximal performance measure for each production unit relative to all other production units in the observed population with the sole condition that each production unit lies on or below the external frontier, which satisfies a set of axioms.

DEA is a tool for evaluating relative efficiency since it first identifies units on the efficiency frontier and then compares other units: input-output relationship with those of the frontier. It allows to rank units according to their Technical Efficiency scores and to single out the driving forces, for inefficiencies.

DEA is a mathematical programming technique that provides useful insights in locating inefficient units by explicitly considering the mix of services provided and the resources used. DEA can locate inefficient units more powerfully when the number of units in the study exceeds the number of outputs and inputs included in the data set.

DEA is commonly used to evaluate the efficiency of several producers. A typical statistical approach is characterized as a central tendency approach and it evaluates producers relative to an average producer. DEA can be applied in many cases such as health care, education, banks, manufacturing sector, bench marking management evaluation, fast food restaurants and retails sectors etc.

3. Research methodology

The DEA model was basically designed to compare marginal efficiencies of a set of relative homogeneous decision-making units. The non-parametric approach to efficiency measurement is more suitable for policy applications. Since it was more flexible and more data-based policy applications, it generally involved additional constraints. The present study deals with non-parametric approach to the measure of productive efficiency. The various efficiency measures discussed in the present study are Overall Technical Efficiency, Pure Technical Efficiency, Scale Efficiency and Technical Efficiencies of commercial banks in India.

3.1 Statement of the Problem

In Indian banking system profit and returns to investments were its performance indicators. This was the scenario prior to 1969. Subsequently, commercial banks were nationalized adding to their list additional objectives of optimizing social benefit and geographical expansion to meet the growing needs of people. Globalization opened gates to increased competition by the entry of foreign banks. The changes that are taking worldwide continued to give shocks to the banking system which resulted in an expansion of banking services both in ranges, volume and non-performing assets. Indian commercial banks must rise to international standards and evolve suitable competitive strategies.

The present study aims at constructing and solving linear programming problems to estimate Overall Technical, Pure Technical, Scale and Technical Efficiencies of Public and Private sector banks in India. The study uses the Data Envelopment Analysis (DEA) to measure bank efficiency.

3.2 Objectives of the Present Study

The main aim of the present study is to measure the efficiency of public and private sector commercial banks in India by using three inputs and three outputs.

1. To estimate Overall Technical, Pure Technical, Scale and Technical Efficiencies of Public and Private sector banks in India
2. To evaluate the performance of these banks through efficiency measures.

The study uses the Data Envelopment Analysis (DEA) to measure bank efficiency.

3.3 Type of Research – Analytical Research
3.4 Data Source

The data relevant to 21 Public and 21 Private sector Banks for the present study is obtained from Reserve Bank of India Bulletin (2017-2018). The current study failed to evaluate Commercial Banks efficiency scores for the period 2018 – 2019, because RBI not published yet the Banks report for the financial year 2018 - 2019. The translog input distance function that accommodates multiple inputs to provide multiple outputs is proposed to be fitted. The method of estimation used is maximum likelihood, so that the statistical estimator of parameters possesses standard errors and hence t-values. The variables of the study are:

Input variables: Number of Employees, Interest Income and Other Income.
Output variables: Deposits, Investments and Advances.

3.5 Tools Used for Analysis – DEA, Mean, Standard Deviation and t-test

4. Data analysis & interpretation

The present study makes use of Data Envelopment Analysis models to study the efficiency variation among 42 Indian Commercial Banks. The current study uses the data on three DEA inputs and the three DEA outputs. The data on the selected variables are collected from Reserve Bank of India Bulleting (2017-2018).

Table 4.1: Public Sector Banks – Overall Technical Efficiency (OTE), Pure Technical Efficiency (PTE) & Scale Efficiency (SE)

S. No.	Public Sector Banks	OTE	PTE	SE
1	ALLAHABAD BANK	0.995	1.00	0.995
2	ANDHRA BANK	0.950	1.00	0.95
3	BANK OF BARODA	1.00	1.00	1
4	BANK OF INDIA	1.00	1.00	1
5	BANK OF MAHARASHTRA	0.921	0.992	0.998
6	CANARA BANK	0.945	0.946	0.998
7	CENTRAL BANK OF INDIA	0.918	1.00	0.918
8	CORPORATION BANK	1.00	1.00	1
9	DENA BANK	0.882	0.902	0.977
10	IDBI BANK LIMITED	1.00	1.00	1
11	INDIAN BANK	0.045	0.046	0.978
12	INDIAN OVERSEAS BANK	0.841	0.842	0.998
13	ORIENTAL BANK OF COMMERCE	0.985	1.00	0.985
14	PUNJAB AND SIND BANK	1.00	1.00	1
15	PUNJAB NATIONAL BANK	0.976	1.00	0.976
16	STATE BANK OF INDIA	1.00	1.00	1
17	SYNDICATE BANK	1.00	1.00	1
18	UCO BANK	1.00	1.00	1
19	UNION BANK OF INDIA	0.999	1.00	0.99
20	UNITED BANK OF INDIA	1.00	1.00	1
21	VIJAYA BANK	0.981	1.00	0.981

From the above table it is evident that, the following public sector banks are efficient based on OTE – Bank of Baroda, Bank of India, Corporation Bank, IDBI Bank Limited, Punjab and Sind Bank, State Bank of India, UCO Bank and United Bank of India. These banks emanated with 100% OTE score, the other left-over banks realised input losses. The bank falling at the bottom is Indian Bank. The overall technical efficiency of the Public sector banks is distributed over the interval $0.045 \leq OTE \leq 1.000$.

From the above table, 16 public sector banks out of 21 are pure technical efficient. This indicates that 76% are Pure Technical Efficient attaining 100% efficiency score. The remaining 5 banks have input losses due to PTE. The PTE of the public sectors banks is distributed over the interval of $0.046 \leq PTE \leq 1.00$. From the above table, it has been observed that 8 public sector banks out of 21 banks, found scale efficient and other remaining banks experienced decreasing returns to scale. Bank of Baroda, Bank of India, Corporation Bank, IDBI Bank Limited, State Bank of India, Syndicate Bank, UCO Bank and United Bank of India achieves cent percent Scale Efficiency. The scale efficiency of the public sector banks is distributed over the interval $0.918 \leq SE \leq 1$.

Table 4.2: Private Sector Banks – Overall Technical Efficiency (OTE), Pure Technical Efficiency (PTE) & Scale Efficiency (SE)

S. No.	Private Sector Banks	OTE	PTE	SE
1	AXIS BANK LIMITED	1.00	1.00	1
2	BANDHAN BANK LIMITED	0.648	0.685	0.945
3	CATHOLIC SYRIAN BANK LTD	0.968	0.982	0.986
4	CITY UNION BANK LIMITED	1.00	1.00	1
5	DCB BANK LIMITED	0.890	0.973	0.914
6	FEDERAL BANK LTD	1.00	1.00	1
7	HDFC BANK LTD.	1.00	1.00	1
8	ICICI BANK LIMITED	1.00	1.00	1
9	IDFC BANK LIMITED	1.00	1.00	1
10	INDUSIND BANK LTD	0.866	0.867	0.998
11	JAMMU & KASHMIR BANK LTD	1.00	1.00	1
12	KARNATAKA BANK LTD	1.00	1.00	1
13	KARUR VYSYA BANK LTD	0.881	0.885	0.995
14	KOTAK MAHINDRA BANK LTD.	0.924	0.939	0.984
15	LAKSHMI VILAS BANK LTD	0.998	1.00	0.998
16	NAINITAL BANK LTD	1.00	1.00	1
17	RBL BANK LIMITED	0.951	0.965	0.986
18	SOUTH INDIAN BANK LTD	1.00	1.00	1
19	TAMILNAD MERCANTILE BANK LTD	0.913	0.993	1
20	THE DHANALAKSHMI BANK LTD	1.00	1.00	1
21	YES BANK LTD.	1.00	1.00	1

From the above table it is evident that, the following private sector banks are efficient based on OTE – Axis Bank, City Union Bank Limited, Federal Bank, HDFC Bank Limited, ICICI Bank Limited, IDFC Bank, Jammu & Kashmir Bank Ltd, Karnataka Bank Ltd, Nainital Bank Ltd, South India Bank Ltd, Dhanalakshmi Bank Ltd and Yes Bank Ltd.. These banks emanated with 100% OTE score, the other left-over banks realised input losses. The bank falling at the bottom is Bandhan Bank Limited. The overall technical efficiency of the Private sector banks is distributed over the interval $0.648 \leq$ OTE ≤ 1.000.

From the above table it is evident that out of 21 private sector banks, 13 banks are pure technical efficient, the remaining 8 banks experienced input losses. The pure technical efficiency of the Private sector banks is distributed over the interval of $0.685 \leq$ OTE ≤ 1.000.

Axis Bank, City Union Bank Limited, Federal Bank, HDFC Bank Limited, ICICI, IDFC, Jammu & Kashmir Bank, Nainital Bank, South Indian Bank, Tamilnad Mercantile Bank and Dhanalakshmi Bank achieves cent percent Scale Efficiency. The scale efficiency of the private sector banks is distributed over the interval $0.914 \leq$ SE ≤ 1.

Table 4.3: DEA - Overall Technical Efficiency

H_0: There is no significant difference in the performance of Public and Private sector banks with respect to overall technical efficiency/pure technical efficiency/scale efficiency

H_1: There is a significant difference in the performance of Public and Private sector banks with respect to overall technical efficiency/pure technical efficiency/scale efficiency.

t-Test: Two-Sample Assuming Equal Variances						
	Public Sector Banks (OTE)	Private Sector Banks (OTE)	Public Sector Banks (PTE)	Private Sector Banks (PTE)	Public Sector Banks (SE)	Private Sector Banks (SE)
Mean	0.93	0.95	0.94	0.97	0.99	0.99
Variance	0.04	0.01	0.04	0.01	0.00	0.00
Df	40.00		40.00		40.00	
t Stat	-0.59		-0.55		-0.45	
P(T<=t) two-tail	0.56		0.58		0.65	
t Critical two-tail	2.02		2.02		2.02	

It is evident that the result is not significant at 5% level of significance. The OTE estimates obtain from the above table reveals that 16 out of 21 public sector banks have consistently shown the OTE above to the average OTE whereas the remaining 5 banks registered its OTE's below to the average of OTE. In case of Private sector banks 14 have shown OTE above to the average OTE and the remaining 7 banks registered the OTE below to the average OTE.

From the hypothesis testing it is evident that the difference between Public and Private sector banks under Pure Technical Efficiency is not significant at 5% level. 18 Public sector banks out of 21 banks consistently shown that their PTE is above to the average public sector PTE. Whereas when it comes to Private sector, 16 banks PTE above the concerned average.

Scale efficiency difference between public and private sector banks are not significant at 5% level of significance. 14 out of 21 public sector banks consistently shown that their SE is above to the average SE whereas in case of private sector banks 16 banks SE's is above to the average SE.

4.1 Efficient Peer Banks

Relatively inefficient DMU imitates the management style of its Peer. An appropriate efficient peer is the best practices performer in the sample that is like the inefficient unit in some respect and can lend insights useful for inefficient unit to improve.

Table 4.4: Public Sector Banks – Efficient Peers

S.No	Public Sector Banks	Peers			
1	ALLAHABAD BANK	United Bank of India	Bank of Baroda	UCO Bank	State Bank of India
2	ANDHRA BANK	UCO Bank	Bank of Baroda	Corporation Bank	
3	BANK OF BARODA	Bank of Baroda			
4	BANK OF INDIA	United Bank of India	Bank of Baroda	Punjab and Sind Bank	UCO Bank
5	BANK OF MAHARASHTRA	United Bank of India	Bank of Baroda	UCO Bank	Punjab and Sind Bank
6	CANARA BANK	Bank of Baroda			
7	CENTRAL BANK OF INDIA	United Bank of India	UCO Bank		
8	CORPORATION BANK	Corporation Bank			
9	DENA BANK	State Bank of India	United Bank of India	UCO Bank	Bank of Baroda
10	IDBI BANK LIMITED	IDBI Bank Limited			
11	INDIAN BANK	United Bank of India			
12	INDIAN OVERSEAS BANK	Bank of Baroda			
13	ORIENTAL BANK OF COMMERCE	United Bank of India			
14	PUNJAB AND SIND BANK	UCO Bank	Bank of Baroda	Corporation Bank	IDBI Bank Limited
15	PUNJAB NATIONAL BANK	Punjab and Sind Bank			
16	STATE BANK OF INDIA	Bank of Baroda	United Bank of India	State Bank of India	
17	SYNDICATE BANK	State Bank of India			
18	UCO BANK	Syndicate Bank			
19	UNION BANK OF INDIA	Bank of Baroda	Corporation Bank	IDBI Bank Limited	
20	UNITED BANK OF INDIA	United Bank of India			
21	VIJAYA BANK	Bank of Baroda	Punjab and Sind Bank	Syndicate Bank	

For majority of Inefficient banks Bank of Baroda and IDBI Bank Limited are efficient peers. These two banks serve as role models for Andhra Bank, Bank of Baroda, Bank of Maharashtra,

Punjab and Sind Bank, Union Bank of India and Vijaya Bank. The normal practices of efficient peer banks are the best practices of the inefficient bank.

Table 4.5: Private Sector Banks – Efficient Peers

S.No	Private Sector Banks	Peers				
1	AXIS BANK LIMITED	Axis Bank Limited				
2	BANDHAN BANK LIMITED	Yes Bank Ltd	Federal Bank Limited			
3	CATHOLIC SYRIAN BANK LTD	Dhanalakshmi Bank Limited	Jammu and Kashmir Bank Limited			
4	CITY UNION BANK LIMITED	City Union Bank Limited				
5	DCB BANK LIMITED	Yes Bank Ltd	Federal Bank Limited			
6	FEDERAL BANK LTD	Federal Bank Limited				
7	HDFC BANK LTD.	HDFC Bank Limited				
8	ICICI BANK LIMITED	ICICI Bank Limited				
9	IDFC BANK LIMITED	IDFC Bank Limited				
10	INDUSIND BANK LTD	ICICI Bank Limited	Federal Bank Limited	Axis Bank Limited	Yes Bank Ltd	
11	JAMMU & KASHMIR BANK LTD	Jammu and Kashmir Bank Limited				
12	KARNATAKA BANK LTD	Yes Bank Ltd				
13	KARUR VYSYA BANK LTD	IDFC Bank Limited	Federal Bank Limited	Dhanalakshmi Bank Limited	Karnataka Bank Limited	
14	KOTAK MAHINDRA BANK LTD.	Federal Bank Limited	ICICI Bank Limited	Yes Bank Ltd	IDFC Bank Limited	
15	LAKSHMI VILAS BANK LTD	IDFC Bank Limited	Federal Bank Limited	South Indian Bank Ltd	Nainital Bank Limited	Dhanalakshmi Bank Limited
16	NAINITAL BANK LTD	Nainital Bank Limited				
17	RBL BANK LIMITED	Yes Bank Ltd	Federal Bank Limited	ICICI Bank Limited	IDFC Bank Limited	
18	SOUTH INDIAN BANK LTD	South Indian Bank Ltd				
19	TAMILNAD MERCANTILE BANK LTD	IDFC Bank Limited	Karnataka Bank Limited	Dhanalakshmi Bank Limited	Federal Bank Limited	
20	THE DHANALAKSHMI BANK LTD	Dhanalakshmi Bank Limited				
21	YES BANK LTD.	Yes Bank Ltd				

For majority of Inefficient banks Federal Bank, Yes Bank, IDFC Bank and Dhanalakshmi Bank Limited are efficient peers. These four banks serve as role models for Bandhan Bank, Catholic Syrian Bank, DCB, IndusInd Bank, Karur Vysya Bank, Kotak Mahindra Bank, RBL and Tamilnad Mercantile Bank Ltd., The normal practices of efficient peer banks are the best practices of the inefficient bank.

5. Summary & Conclusion

DEA has been successfully applied to a host of different types of entities engaged in wide variety of activities in many contexts worldwide. It has grown into a powerful quantitative analytical tool for measuring and evaluating the performance. In banking Industry, DEA model is preferable to econometric approach of efficiency measurements because of its advantages. As we know efficiency in banking system contributes in an extensive way for higher economic growth in any country, studies in this nature are very important for policy makers, industrialist and many others who are reliant on the banking sector. The present study aims at constructing and solving linear programming problems to estimate Technical, Pure Technical and Scale Efficiency of Public and Private sector banks in India. During the period 2017 – 2018, the following public and private sector banks are efficient based on all the three estimates ie., OTE, PTE and SE. They are Bank of Baroda,

Bank of India, Corporation Bank, IDBI, Punjab and Sind Bank, SBI, UCO Bank and United Bank of India; when it comes to private sector the following banks are outperformed based on their efficient scores from all the three estimates – Axis Bank, City Union Bank, Federal Bank, HDFC Bank, ICICI Bank, IDFC Bank, Jammu and Kashmir Bank, Karnataka Bank, Nainital Bank, SIB, Dhanalakshmi Bank and Yes Bank. Based on Peer weights - Bank of Baroda, IDBI Bank, Federal Bank, Yes Bank, IDFC Bank and Dhanalakshmi Bank are served as a role model in Banking Sector for the other remaining 35 banks. Normal practices followed by these 6 banks are the best practices for the other inefficient banks.

6. Research Limitations & Directions for Further Research:
Limitations of the Study

1. The study is restricted to the financial year 2017 – 2018 due to time constraint.

2. The current research failed to evaluate the performance of Indian Commercial Banks for the year 2018 – 2019, due to unavailability of the data.

The current study is limited to India, the research can be extended by covering wide geographical area by considering samples across the world. The study can be further diversified with different combinations of Input-Output models i.e, one input – two outputs or 2 inputs – two output models etc., The current study can enlarge by considering five years data relevant to public and private sector banks and evaluate the level of consistency in the efficiency. Research can be prolonged by evaluating efficiency of banks before and after the demonetization and how is it affecting the economic growth.

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Digital vs. physical procurement: role of GeM in transforming B2G procurement in India

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Keywords

Abstract

The public procurement in India spending is estimated to be 20% of GDP of economy. It has been struggling with the challenges of decentralized procurement of commonly used items for quite a long time. The purchases in small quantities lose the benefits of economies of scale and at the same time these purchases are also vulnerable to malpractices because it is very difficult to monitor thousands of small transactions. Small vendors and suppliers find it difficult to reach buyers in other parts of the country without layers of intermediaries, pushing up their costs.

To deal with this challenge and based on the recommendations of two high level committees, the Government of India set-up the Government e-Marketplace (GeM) in 2016. To provide policy support, a new enabling rule was introduced in 2017 through the government's General Financial Rules (GFR), signaling its willingness to bring reform in this area.Since then, this Business to Government (B2G) platform, has eliminated multiple levels of manual, sequential verification and decision-making, leading to dramatic reductions in lead-time in government procurement. For suppliers, too, this has opened attractive new options by eliminating intermediaries and guaranteeing prompt release of payment.

In a short span of two years or so, the platform has opened up market access for micro and small enterprises and entrepreneurs, expanding the number of potential suppliers but due to some institutional bottlenecks and traditional mindset of procurement authorities GeM has not become so popular as it was expected.

The e marketplace has also helped promote entrepreneurship and create new jobs. It has enabled many small entrepreneurs to grow their business. It has proved to deliver promising results to the purchasers through this special purpose vehicle. GeM has created transparency in public procurement and brought down the delivery time too.

GeM caters to 182,184 sellers and 32,210 buyer organizations covering 7,41,085 products and 3587 services till 15 January 2019. In all, 1,187,961 orders have been placed so far, with a total value of Rs. 17,188 Crores. Most of India's states have also signed Memorandum of Understanding (MoU) with GeM for using this platform for commonly used items. The e-marketplace has set an ambitious target to achieve Gross Merchandise Value (GMV) equivalent to 4-5% of India's GDP. If 15-25 % savings are realized on this volume of procurement, it will free up enormous sums which the government can use to finance its development and poverty alleviation programs.

This is one of the ambitious plans of government to put efforts to bring more SHGs, artisans and start-ups on this platform. This paper is an effort to present the journey of GeM to analyse its growth story and limitations.

The value-driven freight transportation system for accelerating the development of Bangladesh

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Keywords
Freight, Bangladesh, Environment, Seaport, Intermodal, Maritime.

Abstract

The freight transportation system of Bangladesh is very critical as it depends on the unimodal or road transportation system traditionally. Having the opportunity of using the modes of rail and river that are environment-friendly and less expensive compared with the mode of road arguably. However, rail and road are not popular due to improper connectivity between the urban cities/industrial areas and seaports. Recently, Chittagong Port is ranked 64th top listed container port of the world by Lloyd's List because of its container throughput or handling statistics that increased significantly. Greatly, the intermodal freight transportation system is the total maritime transport solution and denoted as value-driven freight transportation system exclusively for a door-to-door service in the age of containerization. On the other hand, inland transport networks of Bangladesh are lagging the standard of intermodal networks in between the shipper/consignee nodes to /from seaports. Huge intermodal infrastructure development is appreciated to get the seamless transport connectivity with the seaports for accelerating the transportation of cargo and container timely and economically. The government of Bangladesh and the principal seaport Chittagong jointly need to take the necessary steps to create integrated intermodal freight transports networks with the combination of rail, road and river mode for facilitating the international trade also providing freight transport services to the neighbors. In here, qualitative research methodology is selected to explore the necessary gaps and opportunity for enabling the freight transportation system of Bangladesh.

The goal of this paper is to analyze the freight transportation system of Bangladesh and explore the points where works are required by the government to create a value-driven freight transportation system to accelerate the development of Bangladesh.

Risks-Benefits perception of digital supply chain finance platform in the context of Bangladesh

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Abstract
In this modern era of globalization and advancement of technology, the urgency of automation in the financial sector is increasing day by day. To meet the increasing demand of an expanding population, modern supply chains need to be more dynamic, robust and scalable. In developing economies, the need for supply chain financing in basic level of production and distribution lifecycle is growing day by day. But in Bangladesh, due to lack of funding and technical knowledge, a proper ecosystem has not been developed for structured supply chain financing (i.e. factoring, work order and distributor financing). This paper primarily investigates some of the key risks and challenges in implementing a digital supply chain platform through questionnaire-based research. Moreover, this paper develops some risk mitigation strategies that would be useful for any organization planning to implement a digital supply chain platform.

Introduction

In Bangladesh suppliers and distributors operate in the lower segment of production and distribution lifecycle. Based on the extent of their business the ticket size for supply chain financing is relatively small. MSEs (Medium & Small Enterprises) have very limited access to structured financing, thus revert to inflated cost, irregularity in financing which hinders their business growth. Large corporates that are termed as Original Equipment Manufacturers (OEMs) prefer to deal with selective number of suppliers and distributors to ensure ease of operation in a manual environment. However, MSEs generally cannot directly engage with OEMs in business due to shortage of funds and presence of agents/middlemen. MSEs also lack substantial collateral which restricts their access getting financing in the current environment or ecosystem.

The present need instigates the demand for a proper supply chain ecosystem to support the growth of MSEs. This system will make MSEs' financial inclusion easier so that they can complete operational process with proper funding. The transformation of manual to digital platform will save time, money and resources and increase the overall efficiency of the business process. The reduction in operational costs will cover up the interest expense of financing. In recent years, Non-Banking Financial Institutions (NBFIs) have played a remarkable role in introducing supply chain finance to big suppliers and distributors in the domestic market. NBFIs are proactively stepping forward to offer supply chain financing services. More research and analysis need to be conducted for the upgradation of the existing system from a manual to digital platform.

New age Fintech companies emphasize on cloud-based technologies and they are being more interested to invest in supply chain finance. It helps them provide more options to potential clients who are eager to sell their payables and receivables. This process ensures early payment in exchange for discounts. The involvement of technology and digitalization can help financial institutions to reach out to the target segment.

Literature review

The digitalization of financial services is likely to increase competition and security risk for information sharing. Cloud-based infrastructure indicates the reduction of fixed costs in hardware (Corporation, 2017). Schlüter, Diedrich, and Güller (Schlüter, et al., 2017) emphasized the impact of digitalization on supply chain risk management cycle. Based on literature analysis they have discussed supply chain risk management phases.

Monostori (Monostori, 2018) summarized some risk mitigation strategies considering the robustness of the supply chain. In their study they introduced a framework for evaluating structural and operational robustness of supply chain. On the other hand, Bahroun and Harbi (Bahroun & Harbi, 2015) proposed a new framework for risk categorization based on literature review and case study of a leading retail company in Tunisia. They outlined a numerical analysis of supply risk and indicated new opportunities for research in supply chain arena.

Houshyar, Muktar, and Sulaiman (Houshyar, et al., 2010) investigated the probable reasons for supply chain disruptions and classified the risks associated with it. Based on the classification they have developed strategies that can mitigate the risks. Finally, they used and automotive supply chain case study in Malaysia to support their findings. Meixell and Norbis (Meixell & Norbis, 2011) developed a two-part assessment methodology that uses a combination of individual risk and element interaction to assess the security risk of global supply chain practices. Their framework results in a single supply chain risk index value for a specific supply chain.

McFadden and Arnold (McFadden & Arnold, 2010) Focused on the market of IT electronics to analyze the risk associated with the IT supply chain. In their study they discussed deployment of test suite that will significantly reduce the threat of malicious implants in digital system. Kobayashi, Tamaki, and Komoda (Kobayashi, et al., 2003) proposed a solution for business process integration involving workflow and enterprise application integration. According to them their proposed solution will reduce manpower, cost and process complexity of supply chain management

Korpela, Dahlberg, and Hallikas (Korpela, et al., 2017) studied the requirements and functionalities of supply chain integration and concluded that integration with the blockchain network will benefit supply chain ecosystem and accelerate growth potential. Mathis and Cavinato (Mathis & Cavinato, 2010) explored the best practices of global supply chain financing and management. According to them, decentralized approach creates inefficiency for the overall supply chain process. Neubert, Ouzrout and Bouras (Neubert, et al., 2004) studied the methods used for supply chain collaboration and highlighted the importance of integration with technological platforms in supply chain process.

Silvestro and Lustrato (Silvestro & Lustrato, 2014) assessed the role of banks in enabling supply chain integration. Their research analyzed the perspective of buyers and sellers to develop a model of physical and financial supply chain integration.

Albrektsson (Albrektsson, 2011) also studied supply chain finance from a bank's perspective and outlined the benefits and challenges involved in digital supply chain solutions. According to the study, banks can reduce the inefficiency of resource allocation through holistic automated supply chain services.

Wang and Yang (Wang & Yang, 2016) studied the structure of different loans in the supply chain ecosystem and analyzed the risk associated with it. According to them some of the major risks of microloans include but not limited to higher financing cost, loan default, business transfer, internal control etc.

More and Basu (More & Basu, 2012) examined the challenges of supply chain finance and developed a hierarchical model to understand the complexity of them. Their research on Indian firms revealed that the most critical challenge in way of supply chain finance is the lack of common vision among supply chain partners. He concluded that collaborative approach among all supply chain partners can improve the stability of the process. Similarly, an article by Supplychainbrain

emphasized on collaborative approach of supply chain managers for successful implementation of supply chain finance services (SupplyChainBrain, 2015).

Ivanov et al. (Ivanov, et al., 2019) studied the impact of digitization on supply chain risk management. Their study focused on digital supply chain twins and proposed supply chain risk analytics framework. They have suggested virtual reality supported simulation to resolve disruptions in the system. Their claim is also supported by Banker (Banker, 2018) who proved that the supply chain twin maintenance model will help to minimize the forecasting errors and unplanned failures in supply chain.

Manuj and Mentzer (Manuj & Mentzer, 2008) conducted 14 interviews and FGD meetings with top supply chain executives and outlined six risk management strategies for global supply chain of the manufacturing industry. Olson and Wu (Olson & Wu, 2010) also studied supply chain risk management. They focused their studies on risks of supply chain in China. They concluded their research with a framework that can categorize risks associates with Chinese enterprise supply chains. Similarly, Büyüközkan and Göçer (Büyüközkan & Göçer, 2018) emphasized on existing digital supply chain literature to identify the key limitations and prospects of digital supply chain management. The importance of all these analyses was reflected by Zsidisin and Henke (Zsidisin & Henke, 2018). In their research they showed how traditional concept of supply chain risk can bridge the gap of existing risks and prospects.

A new digital revolution in the supply chain field is brought by Blockchain technology. Ying, Jia and Du (Ying, et al., 2018) researched Blockchain enabled E-commerce platform of Hainan Airlines and found that blockchain can add value by issuing cryptocurrency, ensuring information security and eliminating organizational intermediaries. Kshetri (Kshetri, 2018) highlighted how blockchain can help to achieve supply chain objectives. According to him the incorporation of IoT in blockchain technology will positively impact current supply chain management process.

Saberi et al. (Saberi, et al., 2019) examined blockchain technology with respect to supply chain management. They divided technology adoption barriers into 4 categories: inter-organizational, intra-organizational, technical and external. On the other hand, Min (Min, 2019) focused on how blockchain can be leveraged to minimize organizational and technical risks associated with supply chain process. According to his research blockchain can create competitive advantage by preventing risk occurrence, reducing system disruptions, improving flexibility and changing conventional risk management processes. Giannakis, Spanaki, Dobey (Giannakis, et al., 2019) examined the effects of cloud-based supply chain management on supply chain responsiveness. They developed an architecture of cloud-based systems and proved that it enhances supply chain responsiveness.

Research methodology

For this study, we have followed web-based questionnaire methodology. A standard online questionnaire was prepared comprising questions regarding critical risk and challenges of digital supply chain platform and proposed mitigation strategies. The questionnaire was then circulated among 20 suppliers/distributors and 10 Original Equipment Manufacturers (OEMs). Research findings were developed based on their responses.

Secondary data was collected from refereed journals, articles, websites, etc. We linked the secondary data with our primary research findings and found positive correlation.

Findings and Results

Benefits of implementing a digital platform

From the 30 companies who submitted their responses, we have found the following benefits to be most evident and common among suppliers, distributors, and OEMs.
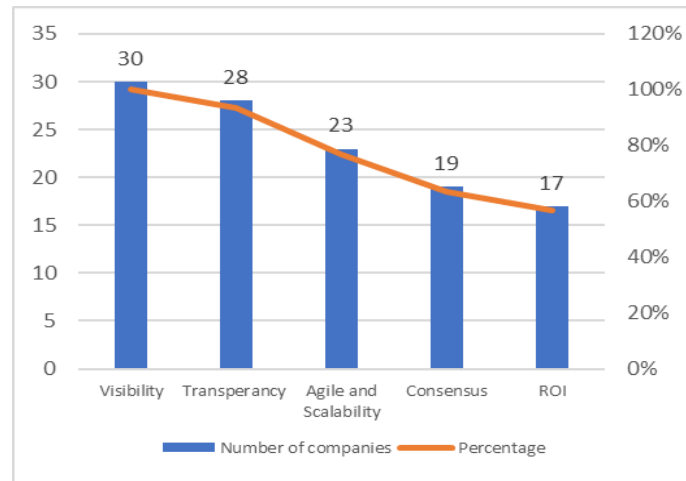
Figure 3: Benefits of digital supply chain platform identified by the sample population

From figure 1 we can see out of the 30 companies 100% of them agreed that the digital supply chain platform will bring visibility in their day to day operations. In manual process due to delay in documentation and approval of the whole operation gets hampered. An integrated digital platform provides scope for cross-sectional data transfer and ensures visibility in the process. 28 companies (93%) pointed out transparency to be a major benefit of digital supply chain platform as invoices are uploaded in a shared platform and visible from all ends. 23 companies (77%) emphasized on the cost reduction feature and scalability of the digital system as it will reduce documentation and transportation cost. 19 companies (63%) agreed that through the digital system it is easier to reach mutual agreement if transparency is maintained. 17 companies (57%) highlighted return on investment to be a key benefit of supply chain finance platform.

In Table 1 we can see details of the mutual benefits of implementing a digital supply chain finance platform from different stakeholders' standpoints.

Benefits from supply chain management	Finance provider	Supplier/distributors	Corporate/OEMs
Visibility	-Enables development of performance scorecard of clients -Improved understanding of business performance and intricacies	-Faster access to working capital -Line/rejection correction management	-Market insights and sales data reports -Improved inventory management
Transparency	-Improves risk management -Provides cross-selling opportunities	-Reduced documentation -Improved funding rates	-Better management of receivables and payable
Agile and Scalability	-Short lead and development time -Faster expansion to ecosystem participants	-Easy and standard setup across various OEMs and other stakeholders	-One common ledger across all suppliers and dealer
Consensus	-Reduce disputes -Reduce operational risk	-Reduce invoice disputes -Efficiency on operational tasks (e.g. reconciliation, invoice matching, etc.)	-Useful for procurement and invoice processing -Reduction of stock audit costs
ROI	-Quick return on investment -Penetration into new markets	-Increase in production cycles -Reduction in operational errors	-Focus production based on market data -Reduction of operational risks

Table 1: Benefits of Digital Supply Chain Platform for Different Stakeholder

Risks of implementing SCF platform
4.2.1 Internal risks

Lack of executive support: Risk arises from lack of management policies and internal control. Change in management policies, inadequate internal control structure, lack of knowledge and organizational skills may result in this type of risk.

Fraud/ corruption: Collusion among parties, dishonest staff, lack of audit trails, control systems, proper product guidelines open ways for fraud and corruption.

Data protection and compliance: This risk arises from inadequate security measures, lack of comprehensive IT policies, failure to ensure data integrity in the system etc. This risk also results in internal audit and compliance issues.

Treasury management: Failure to maintain proper cash flow, unavailability of proper reconciliation system creates risk for SCF platform implementation.

Human error: Lack of training, resistance to change, lack of technical knowledge can possess serious risks for any organization in new systems implementation.

4.2.2 External Risk

Breach of contract: Due to commitment issues among stakeholders, organization can suffer through the process of establishing a digital platform. Failure to provide services or inability to complete payment on time creates a lot of complications for organizations.

Electronic banking: Risk arises from not being able to meet the funding commitment due to lack of alternative payment methods.

External environment: Risk arises from the change in economic, social, political, regulatory environment and new tax inclusion.

Recommendation

Based on our research findings we have formulated some risk mitigation strategies in table 2 for the key risks identified.

The Key Risks	Risk Mitigation Strategies
Treasury Management	-Up to date procedural manual; -Monitoring daily fund requirements & positions;
Supplier's commitments	-Create adequate provisions; -Monitor the supplier's activities on utilization of funds;
OEM's Commitment	- Develop a proper MoU with the OEMs; - Incorporating the exit clause in the agreement;
Data protection & Compliance Breach	- Adequate training & awareness program for the users; -Develop a comprehensive IT security policy; -Continuous monitoring of critical data within the system
Internal Audit & Compliance	- Prioritization Mechanism - Buy in resources; - Peer review of audit plan
External Environmental	- Continuous dialogue with the regulatory bodies & policymakers; - Monitor the competitor's business & role in the market;
Relationship with third parties	- Develop a proper MoU with the OEMs; -Incorporate adequate exit clause in the agreement;
Electronic Banking	- Ensure multiple arrangements with different Banks;

Table 2: Risk mitigation strategies

Conclusion

Globalization and the expansion of supply chain financing will set a new trend in the industry. The supply chain financing scope is expanding as a result of globalization, direct sourcing, automated production, and distribution. Financial companies must come up with innovative ideas to keep pace with the expansion of the economy. In Bangladesh, most of the large businesses are digitalizing their systems like ERPs and SAPs. As world becomes increasingly digital, financial services providers are looking to offer customers the same services to which they're accustomed, but in a more efficient, secure, and cost-effective way. Proper assessment of risk will help organizations evaluate the future course of action in adopting digital supply chain finance platform.

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Human resource accounting: A new dimension in global scenario

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Abstract

'Human Resource Accounting is a term applied by the Accountancy Profession to enumerate the cost and value of employees of their employing organisation'

To ensure growth and development of any organisation, the efficiency of people must be increased in the right perspective. Devoid of human resources, the other resources cannot be operationally successful. The original health of the organization is indicated by the human behaviour variables, like group loyalty, skill, motivation and capacity for effective interaction, communication and decision making.

Five fundamentals (Men, materials, machines, money and methods) are the resources required for an organization. These resources are broadly classified into two categories, viz., animate and inanimate (human and physical) resources. Men, otherwise known as the human resources, are animate resources. Others, namely, materials, machines, money and methods are inanimate or physical resources.

The success or otherwise of an organization depends on how best the inadequate physical resources are utilized by the human resource. Therefore, the efficient and effective utilization of inanimate resources depends largely on the quality, calibre, skills, perception and character of the people, that is, the human resources working in it. The term Human resource at macro level indicates the sum of all the components such as skills, creative abilities, innovative thinking, intuition, imagination, knowledge and experience possessed by all the people. An organization possessed with abundant physical resources may sometimes miserably fail unless it has right people, human resources, to manage its affairs. Thus, the importance of human resources cannot be ignored. Unfortunately, till now generally accepted system of accounting (GAAP) this important asset, viz., the human resources have not been evolved

The Concept of Human Resource Accounting was established primarily for the service sector has now started gaining so much relevance that now Companies in all Sectors have applying HR Accounting and a good weight age is given to these reports when making any Company Analysis

The Focus of this paper what are adequate method for recording of Human Resources cost for Assigning, budgeting, and reporting in accounting books. The Aim of HR Accounting is to represent the Potential of the Employees in Monetary Terms.

Forecasting optimum faculty requirement on course allocation: evidence from department of business administration, Daffodil International University

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Keyword
ARIMA, Stochastic, LPP, Optimize, Course Allocation, Markov Chain

Abstract
  In Bangladesh, public universities have a specific rule about number of students to get admission in each department and hence, the course allocation is predetermined according to their (Department) permanent faculty. However, in case of private universities set for student-admission is not fixed in most of the cases. This research deals with the problem of course allocation among the faculties according to their expertise for the upcoming semester in a private university due to the unpredictable student-admission as well as enrollment in major areas with respect to their permanent faculty. In our country, there are 105 number of private universities. Department of Business Administration, Daffodil International University are selected to develop the stochastic linear programming model. In this work, ARIMA (p, d, q) and Markov chain model are developed as a decision support tool to determine the possible number of student-admission for the upcoming semester. Depending on the output a stochastic linear programming model is developed to optimize the number of faculties (in-house and outsourcing) that ultimately minimizes cost. All the department individually deploy the model for their department and then gradually the faculty cost of a university must minimize.

Analyzing the soft skills influencing hiring decision for frontline employees of foreign commercial banks in Bangladesh

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Abstract
Today's banking sector is full of challenge that is reflected by rapid change, knowledge eruption, and technological expansion. To deal with these challenges the role of frontline employees in the service encounter is important. Soft skills are the utmost ideal skills used for service criterion. The main objective of this study is to identify the soft skills and its impact on employers' hiring decision for frontline employees of foreign commercial banks in Bangladesh. Data were collected from 100 respondents who are currently working in the HR department of various banks in Bangladesh. Regression analysis has been conducted to find out the relationship between soft skills and hiring decision of frontline employees in the foreign banking sector. The random sampling technique method has been used with SPSS 20.0 to analyze the collected primary data. This analysis reveals that there is a high association between the impact of soft skills and hiring decision of frontline employees of the foreign banking sector. These analyses also reveal that hiring decision of frontline employees are affected by sociable nature skill, problem solving skill, and self-management skill and have a significant impact on the overall hiring decision of frontline employees in foreign commercial banks. Conversely, passionate skill, adaptable attitude skill and self-improving skill have insignificant relationship between soft skills and hiring decision of frontline employees in the foreign banking sector.

What are common maritime frauds and illegal activities on board ships?

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Keywords

Maritime fraud, fraud investigators, shipping industry

Abstract

It's fair to say that the subject of Maritime Fraud has, in the past, had very little exposure mainly as it rarely gets to the top of a Fraud Investigators 'to do' list. Perhaps the reason this has been is because it crosses multiple jurisdictions and therefore seen as too difficult to investigate.

The question is asked: what is Maritime Fraud and just how prevalent is it, and what measures can be put in place to stop it? During recent years, the shipping industry and Maritime commerce has seen a sharp rise in not only the number of fraud cases, but also the variety of the fraud perpetrated against shipping. Maritime fraudsters are becoming more & more ingenious in their design and execution of fraud schemes, including the use of technology, such as computer hacking, but sometimes tried and tested 'old school' methods such as document fraud, work just as well.

Maritime fraud is slowly becoming a mainstream activity as more and more shipping is crossing our oceans. The International Maritime Bureau defines Maritime fraud as "An international trade transaction that involves several parties - buyer, seller, ship-owner, charterer, ships' master or crew, Insurer, banker broker or agent. Maritime fraud occurs when one of those parties succeed, unjustly or illegally in obtaining money or goods from another party to whom, on the face of it they have undertaken a specific trade, transport or financial obligation. Fraud against shipping is becoming more common due to a number of reasons; criminals are increasingly turning to new methods such as computer hacking as ports are adopting new technologies that in the worst case can enable new types of fraud against (such as Automatize Container Operations 'ACO') and as many ship-owners are under pressure to win new business, many have decided to ignore due diligence when dealing with new business partners.

Shipping is a global business, with many players and jurisdictions involved in a single shipment of cargo, even in a simple A >>> B voyage there are many pitfalls where the fraudster seeks to take advantage of the unprepared. As parties are often based in multiple jurisdictions, and necessarily deal with each other at 'arm's length' and/or through Brokers and Financial Institutions, there may be a little or no opportunity to make 'physical checks'. Everything still comes down to the reliance on paperwork and mostly the Bill of loading. That is also been identified as the inherent weakness in an already corrupt business. The trust in a key document that can be corrupted and issued in multiple originals is the root of many of the frauds being perpetrated today. It might be seen as 'minor' cheating or a multi-million-dollar scam but being prepared is still the key to avoiding becoming a victim.

Fraud can come from many different angles and when we speak of 'fraud' in the Maritime industry, we use it as an umbrella term that goes beyond legal definition but the meaning is clear; someone, somewhere is seeking to take advantage of someone else in a way that goes beyond commercial sharp practice. We again ask the question that if Maritime Frauds are becoming more prevalent how can we integrate proven and robust checks and balances into the system in order to stop Maritime fraud or at best disrupt the activities of the fraudster and in doing so making their attempts less likely to succeed.

The future of teaching and learning in the unscaled economy

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Keywords

Teaching & learning, *artificial intelligence, 3D printing, Virtual Reality, Augmented Reality*

Abstract

As low-level labor functions are substituted for higher level artificial intelligence and other aligned technologies, the ensuing issue becomes the rate of learning of the displaced labor market and its ability to transition to alternative industry needs. Many are preparing for massive global underemployment as we are beginning to see the decrease in demand for undergraduates, graduate and other skilled talent seeking employment opportunities. We are facing an ever-increasing demand for academic credentials at increasing costs with the possibility of lower real yield of economic opportunity (RolleJ.D, Billy I., Kisato J., Acevedo R. & Zarbabal K. ,2017; Reynolds, P. D. ,2012). How do we prepare diverse talent for a dynamic and possibly uncaring world of continuous automation and changing needs of the marketplace?

There is hope for an economy of diversity and inclusion of a broad base of talent using technology such as artificial intelligence, AWS, 3D printing, Virtual Reality, and later, Augmented Reality. Instead of cloning homogenous labor forces to support the demands of mass production, more diverse, creative and agile entrepreneurial teams or persons will cost effectively produce for niche markets -- even as small as units of one (Reynolds, 201; Hemant Taneja, 2018; Rolle et al., 2017,).

The recent book Human + Machine: Reimagining Work in the Age of AI contribution to the growing body of literature is what is referred to as the "missing middle" -- that intersection where both man and machine will collaborate, coordinate, and co-exist as one in the workplace. The challenge is willing the labor force, both current, and future, learn the new "fusion" skills necessary to work in the new workplace fast enough to meet industry demands? How will academic institutions adapt to the new world of teaching and learning with machines? How will faculty that have not experienced the transformation prepare students. Collaboration. Industry with vision and foresight on skills needed must work with academics and other knowledge providers such that the labor force is truly optimized for the new economy.

Changing architecture of academic leadership in internationalized educational environment

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Abstract

World education has been constantly undergoing metamorphosis especially about formulating benchmarks on academic excellence, quality, standardization, innovation, application, meaningful knowledge creation and dissemination. Indian higher education system has been at the crossroads while becoming more inclusive and raising its bar towards creativity and innovation. It has gained traction towards sustainability, quality, adaptability and measurability. Skill development and disruptive technology have become part and parcel of Indian higher and technical education system. Entailing leadership in higher education is of paramount significance in order to produce optimum outcome in any kind of academic decision process. In this context the keynote address will focus on explaining the significance and relevance of dynamic Six C Model of Academic Leadership Excellence in an increasingly competitive and complex global environment. In fact, the Model has already proved to be truly transformation in the realm of higher education in India. The spirit of entrepreneurship and innovation is crystallized by the steady integration of Six C Model in our education system, while effectively stimulating academia-industry collaboration and encouraging the endeavors of practice-research-outreach. The idea is to infuse a sense of dynamic leadership in decision process to make higher education not only competitive in terms of maintaining excellence but also to make it more responsive to societal needs and requirements. Simultaneously globally changing architecture of academic leadership demands higher levels of optimism and positive valence to avoid any room for vacillation when decision is made and duly implemented.

Need for reinventing business model

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Keywords
Competitiveness, Reinventing Business Model, Digitalization, Sharing Economy

Abstract
 The sharing economy, a rising pattern in consumption behaviour that is based on accessing and reusing the products to utilize idle capacity, present significant threats for emerging as well as incumbent business. Therefore, companies must focus not only on product or process innovation. By innovating operational business models and processes, companies can reinvent themselves in an ever-changing and complex market. Business leaders need to understand when to adapt the business model and how to execute the change. Business model innovation is identified as a search for creative and new solutions to problems and needs. For businesses to become more competitive and improving their performance, they must constantly develop new products as well as strategies. Objectives of this paper will focus in the context of Industry 4.0 and its impacts. Business model innovation can provide significant opportunities both during periods of rapid economic growth and at times of turmoil. Business Model innovation have reshaped many industries and redistributed billions of dollars of value. The paper has shed fresh light on our current understanding of business model development as a factor in competitiveness.

Evaluation of SME credit to agriculture sector

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Keywords
SMEs, agriculture system, financial institution, Agro- based loan, Bangladesh

Abstract
The need of supportable as well as environment-friendly agricultural system is inevitable for an agriculturally based country like Bangladesh. To accelerate sustainable growth, Agricultural system need to be developed and reorganized. Though Government of our country is trying to concentrate on this sector with several planning and proper execution of that planning. But without specialized financial support for this sector, development cannot be augmented. One of the major supports for developing this sector is the financial assistant from government as well as the private financial institutions. In this paper authors are trying to focus especially on the agro based SMEs operating their business in Bangladesh and the credit facility they obtain from various sources. A sample survey of 100 entrepreneurs of Agricultural SMEs will be used by the authors to examine their access to and perception about both institutional and non-institutional credit facility. Chi square test has been used to identify statistical association between the considered variables. According to the findings it can be articulated that firm size and duration has some positive impact on receiving of Agro based loan. On the other side the analysis reveals that size and type of firm has no significant association with perception of loan.

Micro-saving based co-operative investment banking (MSBCI-Banking) to reduce the unemployment rate and to improve the poverty condition in Bangladesh

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Abstract
The paper focuses on micro saving based joint investment policy to reduce the unemployment rate and to improve the poverty condition in Bangladesh. Bangladesh is one of the poorest countries in the world with low GDP/capita ($1,888) and minimum purchasing power parity ($3879.20). 21.8% of the total population of Bangladesh lives below the national poverty line while 11.2% of youth graduates from universities are unemployed. Bringing the vast population out of the poverty cycle and to reduce the unemployment rate are the major challenges and attention of the country. Since the independence of Bangladesh in 1971, the governments of Bangladesh and the NGOs have been applying many policies in these regards, but no policy has brought a remarkable outcome.

The main purpose of the paper is to examine the causes for the high rate of unemployment and the tremendous poverty in Bangladesh and to propose innovative approaches to accelerate the entrepreneurship growth and involve the unemployed and impoverished sections of the population to entrepreneurial activities with a view to reduce the unemployment rate and improve the poverty condition.

The study has been conducted by structural and semi-structural questionnaires and face-to-face interviews. A set of 50 structural questionnaires and the same number of semi-structural questionnaires were given to 150 respondents of all professions, classes, and ages of the population. The effectively undertaken initiative in this study is to create a micro saving based joint investment scheme which will allow the unemployed and impoverished sections of the population to save and invest jointly to involve them in entrepreneurial activities in order to reduce the unemployment rate and improve the poverty condition in Bangladesh.

The finding of the study indicates that if the project is implemented properly, it will have a significant impact on the alleviation of the unemployment rate, improvement of the poverty condition and socio-economic development and it can be applied to other developing countries in some conditions and purposes.

Identifying the dependency outline of students' attendance in tertiary level using Markov chain and logistic regression model: A study of department of business administration, Daffodil International University

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Keywords
Keywords: Tertiary level of education, Students' attendance, Markov Chain Model, Logistic Regression.

Abstract
The education of tertiary level is a source of culture for any nation and this issue has always been a major public concern. There are several factors that influence the students to gather knowledge in this level. Among these, class participation is vital for understanding the course contents. The education system of Bangladesh is almost sound and well-organized in all levels including tertiary stage. Even so sometimes, students are unwilling to attend in the classroom for several reasons. In this study, we measured how previous absence of a student impact on their further absence. Markov Chain is a mathematical tool that identified the chance of previous absence effect on the recent absent. In another methods, logistic regression showed the dependency of today's absence on previous absence. In this work, we got, the previous day absence influenced the student to continue his/her absent on the current day. Therefore, students' continuous class participation is important, and any sorts of discontinuity makes a barrier to participate in the next class.

Getting ahead for the next industrial disaster: Experiences from Rana Plaza coordination cell

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Keywords
Disaster rehabilitation, Rana Plaza, Victims, Coordination

Abstract

Rana Plaza building collapse is the largest industrial accident in history happened in densely city of Dhaka on 24th April 2013. Following the unprecedented scale of the disaster and the initial rescue operation, many actors took initiatives formally and informally for the rehabilitation of the victims of Rana Plaza. Mismanagement and Bad governance system of developing country already been reflected by different literature. Apart from this critique, being a newly experienced country how Bangladesh faced the challenges to handle this one of the world's worst tragic urban disaster that is the major inquiry of this study. The outcome of this study shows that Public efforts like Rana Plaza Coordination cell, which established by the Ministry of Labor and employment played a crucial and most influential role to mitigate the two major challenges; lack of coordination and information management. A qualitative approach with its different data collection method is used in this study to identify the challenges and assessment of initiative taken by the Rana Plaza Coordination cell on behalf of the government. FGD, KII and Analyzing the Secondary resources are few tools of this qualitative research. Activities by the government like emergency management, reintegration process, disbursement of compensation to the victims are explored and reviewed here with a critical view to document the clear evidence to combat the challenges respectively.

Findings shows that, traditional social networking tier used during verification system of victims and blogs, social networking site also became a tool to accelerate the rehabilitation process. This study recommends institutionalizing the framework of Rana Plaza Rehabilitation process to tackle the future incident.

An investigative analysis on entrepreneurial intention of entrepreneurship education at the Secondary and Higher Secondary Level in Bangladesh

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Abstract
The aim of this paper is to examine the awareness and intention towards entrepreneurship education at secondary and higher secondary levels in Bangladesh. The key stakeholders of this study are the students of schools, colleges, secondary and higher secondary educational institutes. This study investigates the introduction of entrepreneurial education in Bangladesh and how students perceive the new education dimension in the age of fourth industrial revolution and the critical role of the teacher in entrepreneurship education. The prime objective of the study is to examine the entrepreneurial intentions among the secondary and higher secondary level students in Bangladesh. This will help to identify entrepreneurial intention which determines behavior as well as the need to measure entrepreneurial awareness among the respondents.

The methodology of this study will be quantitative. A structured questionnaire has been designed to collect data from the students of schools and colleges.

The research findings of this study will suggest the actual and hypothetical learning obtained from such programs, which create consciousness of the opportunities for self-employment, inspire entrepreneurial conduct and result in important personal capabilities and competency improvement. It additionally suggests very positive feedback for the need and endured improvement of such programs as an essential intervention in developing a greater entrepreneurial thoughts-set in school and college students.

The findings highlight and provide the principles for the need by policy makers to consider the mainstreaming of entrepreneurship education at school and college levels. Furthermore, commitment by the governmental body and different educational institutions can enhance their learning program in creating entrepreneurs in the country. Finally, greater awareness and the benefits will be communicated to all levels for entrepreneurship development in Bangladesh.

Faster adoption of work-based learning into higher and further education

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Keywords
WBT, propositional knowledge, procedural knowledge, knowledge by acquaintance

Abstract

Evidently there is always a time lag between the knowledge emerging from any work-based learning situations (including wage-based labour occurring in a labour market) and the tertiary education's adoption of the same in the form of a pedagogy. The education providers in the space of higher and vocational education need to focus more on work-based learning (WBL) aiming at faster adoption of this knowledge. However, since this knowledge can be classified into multiple types -- propositional knowledge (information or understanding that can be represented in natural language or a more formal language such as mathematics and propositional logic), procedural knowledge (the knowledge of how to perform some tasks), and knowledge by acquaintance (the non-propositional knowledge of something through direct awareness of it) – each poses a particular challenge as it is adopted into a defined pedagogy.

This research presents, how beyond the classroom, the supervised learning or guided learning hours can be extending to internships, job shadowing, simulations or even effective mentorship programs towards developing rigorous pedagogies underpinning WBL, which is still embryonic. The integration of university or any education provider's curriculum with the real-life WBL always creates a different learning paradigm acknowledging the intersection of explicit and tacit forms of knowing, thus bridging the gap between the learning and the doing. The above task involves some form of knowledge transfer seeking to organize, create, capture or distribute knowledge apart from encompassing a diversity of formal, non-formal and informal arrangements including apprenticeships, industry visit, internship, work placement, or any form of informal learning on the job.

The research critically examines some popular WBL models that are based on the inter-relationship and inter-dependency between understanding learning, critical reflection and the identification and development of capability within a WBL context and proceed to suggest new models (i.e., real-world work assignments on time-limited projects to achieve mandated performance objectives) which can enhance the process of learning while enabling better assessment methods.

How education and structural support explain entrepreneurial intention and entrepreneurial success? A perspective of Bangladesh

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Abstract
Bangladesh has witnessed a steady growth in various socio-economic indicators in the recent years and has become a member in the developing countries consortium. The country has set its vision to become a middle-income country by 2021 and a developed country by 2041. The government has adopted a range of development initiatives and inspires various government and non-government organizations to promote the entrepreneurship development programs. To support the government's move to attain a sustainable economic development through employment generation and resource mobilization a number of government and nongovernment organizations are working to promote entrepreneurship in Bangladesh such as: BIDA, Bangabandhu Innovation Grant, BSCIC, Karmasangsthan Bank, Krishi Bank, Basic Bank Ltd. Grameen Bank Ltd., BRAC, MIDAS Financing Ltd., BRAC Bank Ltd. and Centre for Entrepreneurship Development (CED).

However, there remain a paucity of researches that focus on developing entrepreneurial intention through education and entrepreneurship programs, which may affect adversely in the productivity and efficiency of the development programs. I initiate a study, which aims to examine the antecedents of entrepreneurial intention and its impacts on entrepreneurial success. Grounded basically on the Theory of Planned Behavior (Ajzen, 1991), a comprehensive theoretical framework is developed which comprises Education Support and Structural Support as exogenous variables with other TPB variables to examine entrepreneurial intention and entrepreneurial success in Bangladesh. The results of structural model estimation with a dataset of 224 respondents reveal a significant association between Attitudes, Subjective Norm, Perceived Behavioral Control, Structural Support and Entrepreneurial Intention while Perceived Behavioral Control, Structural Support and Entrepreneurial Intention were found to be of significant contribution in Entrepreneurial Success. Surprisingly educational supports neither produce any effects to boost up entrepreneurial intention, nor contribute to any entrepreneurial success. The education system should require to be restructured with modern curriculum, methods, technology and processes. A compliance of the education system with the government's vision and policy priorities is needed to attain the country's sustainable development.

Factors influencing customer loyalty to the 'Aarong' fashion house brand

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Abstract

Achieving and retaining Customer loyalty is important objective for any business. Customer satisfaction, retention rates, and the customer loyalty positively influence the performance of the business and assist to achieve competitive gain. Fashion house brands in Bangladesh is growing with developing some exclusive brands. Aarong is one of the prestigious and recognized brands in apparel industry of Bangladesh. The purpose of this research is to examine the factors that determine customer loyalty towards Aarong. In this research loyalty means customer perception about the brand and repurchase intention from Aarong. Independent Variables (factors) were chosen after interviewing customers with buying experience from Aarong, and previous studies on fashion industry.

A non-probability judgmental sampling methodology was followed for primary data collection and 301 completed sample responses were collected. Descriptive statistics were conducted to describe the demographic information of the respondents; twelve factors were tested to find out their influence on customer loyalty toward Aarong. Principal Component Factor analysis was used to reduce the less significant factors and find the high significant factors. After data analysis it is found that three major factors labelled as customer perception about the brand, customers' economic benefits and shopping environment. From these factors, the first factor which is customer perception about the brand found most significant factor to explain customer loyalty toward Aarong.

This result might help Aarong to better segment the market and to create more effective marketing program. It may also give a guideline to other brands in the same industry and might be important literature for future researchers in apparel sector.

Introduction

Customer preference is changing frequently towards fashion products and services particularly in apparel sector. Therefore, marketing managers in fashion house brands must take into consideration this fashion changing trends. In addition, marketing planners of fashion house brands must have clear understanding of customer shopping behavior and should design contemporary marketing mix strategy to create superior brand value (Aaker & Stayman, 1990). Customer buying decision is changing as customers are developing different perceptions and attitudes towards various apparel product brands. Apparel is a fashion product type, which expresses consumer's personal characteristics. Broadly, clothing and apparel products are the basic pointer of cultural, social, personal and psychological factors that ultimately affect customers' buying behavior. Currently, Bangladeshi customers are now preferring to buy branded apparel products from Bangladeshi fashion houses. Customer loyalty toward specific brand represents one of the key assets of any enterprise and it is very important in to retain loyal customers in competitive and uncertain market.

This article aims to investigate the influence of certain factors on brand loyalty those are most reliable in the context of Bangladeshi market such as customers' perception about the brand, customers' economic benefits and shopping time factors. Reasons for loyalty toward fashion house brands are not yet clearly understood in the context of Bangladesh. There is increased value in studying how these factors jointly or individually influence customers' loyalty.

This research paper is organized by presenting relevant literature, research gap, possible contribution and the hypotheses development, outlining the research methodology with a focus on primary data collection and measurement issues, interpretation of the results, and discussing the findings, explaining managerial implications, and pointing out research orientations for future research.

Research Background

Aarong is considered as one of the most popular lifestyle retail chain in Bangladesh. This brand was created in 1978 as with a view to empowering rural handicrafts workers, especially women. This brand is a concern of BRAC (Building Resources Across Communities) which is the world's largest development organization (Mannan, M. 2009). The core objective of brand Aarong is to reduce poverty of rural Bangladeshi women.

The brand Aarong produces a wide variety of goods, such as clothing, jewellery, fabrics, leather goods, non-textile crafts, footwear and housewares. All the products of Aarong are made in traditional Bangladeshi style by women from different villages of Bangladesh.

Research Gap and intended contribution

At present days, the customers have become more brand conscious and apparel brands are growing rapidly in Bangladesh. The objective of this research is to analyze the factors that influence brand loyalty to fashion industry. Previous researchers focused mainly on demographic, and psychographic variables for find out reason for loyalty towards fashion house brands. But in this research, along with customers demographic and psychographic variables, the study covers other relevant variables such as factors which characterize brand perception, consumer perceived economic benefits and real time shopping benefits. The outcome of this research will not only improve the understanding of the different factors determining brand loyalty toward a brand, but also assist in market segmentation and formulate suitable customer retention policies and more cost-effective marketing programs than others. In this research variables were selected both from previous researches and face to face customer interaction during shopping time in Aarong outlets. Variables like Cultural reflection in Clothing, apparel product return and change policy, shopping time safety particularly for female shoppers and membership benefit for apparel industry were not addressed properly in previous researches which are considered more influential factors to create brand loyalty towards apparel industry in the context of Bangladesh. This study fills the gap in this research area by showing how some relevant factors particularly applicable for Bangladeshi customers' behavior influence brand loyalty to reputed apparel brand 'Aarong'. Therefore, this study has chosen following variables for testing their influence on customer loyalty to Aarong. The basis for selecting variable was identifying common needs and easy to understand so that it can reveal Bangladeshi customers' actual shopping behavior.

X_1 = Brand attractiveness
X_2 = Superior social image
X_3 = Price Fairness
X_4 = Reflecting Bangladeshi culture in product design
X_5 = Co-cooperativeness of the sales personnel
X_6 = Product return and change policy
X_7 = Shop Atmosphere
X_8 = Ensuring safety for shoppers
X_9 = Promotional Offers

X_{10} = *Flexible payment methods*
X_{11} = *Membership card benefits*
X_{12} = *Reward points*

Literature review

Previous literatures recognized several magnitudes and determinants of customer loyalty. Loyalty dimensions in the previous literatures include positive word of mouth, resistance to switch brand and a preference for a product or service provider. According to Rauyruen, P., & Miller, K. E. (2007) there are four factors of B2B loyalty: first is service quality, second is commitment, third is trust, and fourth is satisfaction.

In a study Morgan, R. M., & Hunt, S. D. (1994) revealed that commitment requires customers to try maintaining a relationship with seller. Moreover, these two researchers sated that, trust could be identified as functional reliability, since it provides customers in the form of security. Trust between customers and sellers plays an important role in building loyalty.

A good number of researches was conducted on finding relationship among loyalty, repurchase intention, and satisfaction. However, those findings differ in terms of the strength of relationship. Although various researchers stated that satisfaction often leads to loyalty, other researchers described that customer satisfaction has a weak correlation with loyalty or repurchase intentions. According to Olsen, S. O. (2007) the relationship between satisfaction and loyalty differs in different industries and the strength of relationship can be influenced by so many factors such as commitment, trust even the level of customer involvement.

Brand Loyalty

Veloutsou, C., Christodoulides, G., & de Chernatony, L. (2013) argued that in competitive business world, loyalty toward brand is essential for business success. Brand loyalty is considered as the one of the key paradigms of consumer brand equity.

Kotler & Keller (2006) also described the importance of loyalty as "as the brand's percentage of loyal customers goes up, market share increases, and the brand becomes more profitable"

Fornerino, M., & d'Hauteville, F. (2010) in their research used the behavioral learning theories to examine how the various incentives influence brand loyalty. This article also stated that price incentive is less attractive than the benefits of a brand provides. The brand loyalty has more correlation with other advantages of the brand than the price incentives provided by the brand.

Brand Attractiveness

According to Elbedweihy *et al*. (2016), brand value congruence and customer to customer similarity drives customer brand identification directly and indirectly through attractiveness of the brand, which in turn creates more sustainable relationships with brands. In addition, brand attractiveness plays a positive facilitating role to create a link between value congruence and customer to customer similarity. Brand attractiveness is a key predictor of both brand loyalty and resilience to adverse information about the brand. These results show that customers' positive perception about the brand play a crucial role in deriving in role and extra role customer behaviors. Brand attractiveness, through the fulfilment of customers' key self-definitional needs, increases customers' positive behavior toward the brand.

Superior social image

Hennigs *et al*. (2013) mentioned that customers' individual luxury brand perception develops based on economic, functional and social considerations. In addition, consumers' brand perception is significantly connected to the cognitive, affective as well as conative components of luxury brand. Customers use brands as a symbol to create a favorable social image. The social perception about luxury brands has positive effect on the overall brand loyalty.

Price Fairness

Martin *et al.* (2009) examined the effect of customers' price fairness perception on brand loyalty. In his research, it is found that customers' perceived fairness about a brand's action can affect customer retention. Since customers who are loyal to brand have a desire to keep their relationship with the brand and they are more positive to the retailer's any minor negative action (e.g., little price increase) than are non-loyal customers (Hess *et al.*, 2003). Hence, loyal customers are more expected to accept minor price increases as normal and reasonable than non-loyal customers.

Cultural reflection in Clothing

Xie, Y. (2016) in one research stated that brand culture and brand characteristics of the product has a very high consistency, it is advantageous to the recognition of the similarity product, thus forming a kind of consumer's choice of brand loyalty.

Co-cooperativeness of the sales personnel

Kim, J., & Kim, J. E. (2014) examined customers may seek interaction with salespersons during shopping time and how this interaction may create salesperson loyalty and eventually store loyalty. This research is important as it can direct salespersons to better meet customer's psychological needs in the context of a selling situation; finally contribute to their salesperson loyalty and loyalty to the brand.

Shop (mall) atmosphere

According to Kotler (1973), mall atmosphere is an effective message creating medium for shopping mall managers through which they can effectively deliver information to their customers that would influence their attitude toward the shopping mall. Indeed, consistent with previous researches, mall atmosphere provides information to shopping mall customers about self- congruity directly for teenagers and indirectly for adults through functional congruity (Shi, Y., Prentice, C., & He, W., 2014). Mall atmosphere also delivers information about functional congruity which in sequence influences their shopping mall evaluation. However, adult and teenage consumers do not use mall atmospheric cues in the same way. The mechanism by which mall atmosphere impact shopping mall evaluation varies depending on whether the shoppers are adult or teenagers.

Promotional offers

Mendez (2015) argued that both monetary and nonmonetary promotions can enhance brand loyalty, in contrast to findings of previous researches. He stated that preference for nonmonetary promotions have more strong effect on brand loyalty particularly for high involvement products. In another research, Zhang, L. X., & Tang, S. L. (2010) showed that promotion activities have indirect effect customer satisfaction, which sequentially has direct effect on brand. In a past research that focused on promotions for cosmetics and toiletry retailers in Hong Kong, monetary rewards such as price discount and premiums considered 'instant-reward' technique, was preferable to the 'delayed reward' techniques. In this case, societal norms were cited as a possible influence (Yang, L., Cheung, W. L., Henry, J., Guthrie, J., & Fam, K. S., 2010).

Flexible Payment methods

Arango, C., Huynh, K. P., & Sabetti, L. (2015) did one research on customer payment instrument choice. Findings of the research highlighted the importance of the two-sided nature of retail payment methods and provide key insight on consumer and merchant behavior. Since the development of payment card system, various researchers have been predicting a cashless retail system. The propagation of merchant card acceptance has coincided pricing incentives for customers who pay with cards. This has led to a decline in the use of cash relative to electronic payments in many economies (Amromin and Chakravorti, 2009). Payment flerxiblity to secure customer loyalty have been used by marketers for many years. For example, credit cards such as those issued by

American Express and the banks who have offered regular customers a range of attractive benefits (Dowling, G. R., & Uncles, M., 1997)

Reward Points

Meyer (2015), in one research revealed that effect of reward compatibility, tangibility and reward timing on preferences are shaped by customers' personal involvement. During high personal involvement, compatibility has the maximum effect on preferences of the loyalty program. Well-matched rewards are perceived to be more appreciated than incompatible rewards (Verhoef, 2003). These transaction utility benefits have been shown to have long lasting effect on brand loyalty.

Objectives of the Study

Broad Objective:

'Aarong' is one of the famous fashion house brands in Bangladesh. They are doing their business since last forty years with tremendous reputation. To remain in the top priority list of customers, it is necessary for Aarong to have proper understating about the reasons for the current demand of Aarong products specially the factors which are determining brand loyalty among customers. Therefore, the research paper highlights the factors that influence customers' loyalty in the form of repeat purchase and positive attitude toward the brand. The research problem is to identify and analyze various factors which build up customers' loyalty toward Aarong and expecting to suggest some direction for other fashion house brands in Bangladesh.

Specific Objectives
1. To identify the demographic characteristics of consumers who buy apparel products from Fashion house brand: 'Aarong'
2. To find out the factors that influence consumers loyalty to 'Aarong'
3. To make some suggestions for the decision makers of brand 'Aarong'

Research Methodologies

This article used a mixture of qualitative and quantitative research to find out and analyze twelve variables (factors) which determining customers' loyalty toward fashion house brand Aarong. At first the qualitative study is conducted to identify independent variables which customers consider important at the time of buying products from Aarong and relevant to the research purpose. Then quantitative research was conducted to collect, analyze the data and test the hypothesis. The survey was conducted on 325 respondents relevant to the research purpose and received 301 completed survey data. Descriptive research including frequencies was used to describe demographic variables of the respondents. For assessing factors, this research used Likert Scale and the statistical tool was used is Principal Component Factor Analysis. The instrument (questionnaire) of this study comprised of two main parts: the first part of the questionnaire covered demographic information of the respondents such as gender, age, occupation and marital status. In second part, twelve variables were selected for this study in order to test their influence on customers' loyalty towards Aarong. The respondents were given a series of statements that measured their degree of agreement towards these variables. An online self-administered questionnaire was developed, and the items were calculated on a 5-point Likert scale with 1 representing low score (Strongly disagree) and 5 representing a high score (Strongly agree).

Research Questions

RQ1: Does *Brand attractiveness* have influence on consumers' loyalty to fashion house brand Aarong?
RQ2: Does *superior social image of the brand* has influence on consumers' loyalty to fashion house brand Aarong?
RQ3: Does *Price Fairness* have influence on consumers' loyalty to fashion house brand Aarong?
RQ4: Does *reflecting Bangladeshi culture in product design* has influence on consumers' loyalty to fashion house brand Aarong?

RQ5: Does *co-cooperativeness of the sales personnel* has influence on consumers' loyalty to fashion house brand Aarong?

RQ6: Does *product return and change policy* has influence on consumers' loyalty to fashion house brand Aarong?

RQ7: Does *Shop atmosphere* has influence on consumers' loyalty to fashion house brand Aarong?

RQ8: Does *ensuring safety for shoppers* have influence on consumers' loyalty to fashion house brand Aarong?

RQ9: Does *promotional offers* has influence on consumers' loyalty to fashion house brand Aarong?

RQ10: Does *flexible payment methods* has influence on consumers' loyalty to fashion house brand Aarong?

RQ11: Does *membership card benefits* has influence on consumers' loyalty to fashion house brand Aarong?

RQ12: Does *reward points* has influence on consumers' loyalty to fashion house brand Aarong?

Hypothesis Development

H1: *Brand attractiveness* has positive influence on consumers' loyalty to fashion house brand Aarong.

H2: *Superior social image of the brand* has positive influence on consumers' loyalty to fashion house brand Aarong.

H3: *Price Fairness* has positive influence on consumers' loyalty to fashion house brand Aarong.

H4: *Reflecting Bangladeshi culture in product design* has positive influence on consumers' loyalty to fashion house brand Aarong.

H5: *Co-cooperativeness of the sales personnel* has positive influence on consumers' loyalty to fashion house brand Aarong.

H6: *Product return and change policy* has positive influence on consumers' loyalty to fashion house brand Aarong.

H7: *Shop atmosphere* has positive influence on consumers' loyalty to fashion house brand Aarong.

H8: *Ensuring safety for shoppers* has positive influence on consumers' loyalty to fashion house brand Aarong.

H9: *Promotional offers* have positive influence on consumers' loyalty to fashion house brand Aarong.

H10: *Flexible payment methods* have positive influence on consumers' loyalty to fashion house brand Aarong.

H11: *Membership card benefits* have positive influence on consumers' loyalty to fashion house brand Aarong.

H12: *Reward points* have positive influence on consumers' loyalty to fashion house brand Aarong.

Data Analysis and Interpretation

Respondents' Demographic Profile

Table: 1

	Gender				
		Frequency	Percent	Valid Percent	Cumulative Percent
	Female	147	48.8	48.8	48.8
Valid	Male	154	51.2	51.2	100.0
	Total	301	100.0	100.0	

Table 1 portrays a balance in gender ratio among respondents, where majority of the respondents are male that is 51.2% out of a total of 301 respondents whereas 48.8% respondents are female.

Table: 2

Age Group		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 to 28	227	75.4	75.4	75.4
	29 to 39	56	18.6	18.6	94.0
	40 to 50	14	4.7	4.7	98.7
	51 and Above	4	1.3	1.3	100.0
	Total	301	100.0	100.0	

With regard to the age group in table 2, more than 75.0% (75.4%) of the respondents are aged 18 to 28 years old; followed by aged 29 to 39 years old (18.6%). In addition, about around 5.0% (4.7%) of the respondents are aged between 40 to 50 years old and 1.3% of the respondents are aged 51 years old and above.

Table: 3

Occupation		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	155	51.5	51.5	51.5
	Service Holder	82	27.2	27.2	78.7
	Business	29	9.6	9.6	88.4
	Housewife	27	9.0	9.0	97.3
	Other	8	2.7	2.7	100.0
	Total	301	100.0	100.0	

In the occupation category it can be highlighted that 51.5% of the sample are student, 27.2% are in the service category, almost 10 % (9.6%) are doing their own business and 9% are housewives.

Reliability Statistics

Table: 4

Reliability Statistics	
Cronbach's Alpha	N of Items
.671	12

For the purpose of checking internal consistency of the independent variables selected, *Cronbach alpha* test was performed, and the alpha value was found for 12 items, 0.671, which is considerably reliable. Cronbach's Alpha Reliability test allows researcher to test the reliability of the research instruments (variables). According to Hair et al. (2003), coefficient alpha also referred as Cronbach's Alpha is shown as a number between 0 and 1. According to Schuessler (1971), an alpha value greater than 0.60 is considered reliable. In other word, based on the result of Cronbach's alpha, the variables have good internal consistency. It also means that all the 12 independent variables selected are reliable and valid to measure the loyalty of consumers to 'Aarong'.

Factor Analysis

Factor analysis is used to reveal the inter-relationships among variables and concentrate those inter-correlated variables into few factors. Thus, researchers use factor analysis to find out whether several variables are correlated with each other or not. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is a statistical tool used to test the suitability of factor analysis. In result, high score indicates factor analysis is more appropriate and low value implies that factor analysis may not be appropriate. However, any value more than 0.60 is considered adequate (Pallant, 2001).

There is no rule of thumb to justify how many cases are needed for running factor analysis. Fiedel (2005) said in a research that usually over 300 cases for sampling analysis is probably adequate. There is universal agreement that factor analysis is inappropriate when sample size is below 50. In this research, 301 samples are taken for continuing the research methodologies.

Table: 5

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.778
Bartlett's Test of Sphericity	Approx. Chi-Square	734.736
	df	66
	Sig.	.000

For KMO and Bartlett's Test, Kaisen (1974) recommended 0.5 as minimum (barely accepted), values between 0.7-0.8 as acceptable, and values above 0.9 are superb. In table 5, the KMO measure is 0.778 which is considered reasonably satisfactory for factor analysis to continue.

In Bartlett's test, this research needs to reject the null hypothesis for uncorrelated variable or non-identity matrix. A significant level less than 0.05 specify that the variables in this analysis have considerable relationship between each other. From the above table, we can observe that the Bartlett's test of sphere-city is perfectly significant as it is 0.000 which means that correlation matrix is not an identity matrix. This result is good enough to reject the null hypothesis and suggest proceeding with a factor analysis.

Total Variance Explained

Table: 6

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.396	28.302	28.302	3.396	28.302	28.302
2	1.606	13.380	41.682	1.606	13.380	41.682
3	1.319	10.994	52.676	1.319	10.994	52.676
4	.945	7.874	60.550			
5	.848	7.067	67.617			
6	.706	5.885	73.502			
7	.647	5.392	78.894			
8	.617	5.138	84.032			
9	.575	4.794	88.826			
10	.479	3.989	92.815			
11	.449	3.741	96.556			
12	.413	3.444	100.000			

Table 6 indicates all the factors extractable from the analysis in connection with their eigenvalues, the percentage of variance attributable to each factor, and the cumulative variance of the factors with the previous factors. It can be highlighted that the factor 1 accounts for 28.302% of the total variance while the factor 2 is explaining 13.380% of the total variance and the third one 10.994%. All the remaining factors are not significant.

Scree Plot

The scree plot is a graph of the eigenvalues against all the factors. The graph is helpful for assessing how many factors to retain. The point of interest is where the curve starts to flatten. It can be observed that the curve begins to flatten between factors 3 and 4. It can be noted that factor 4 has an eigenvalue of less than 1, therefore only three factors was retained.
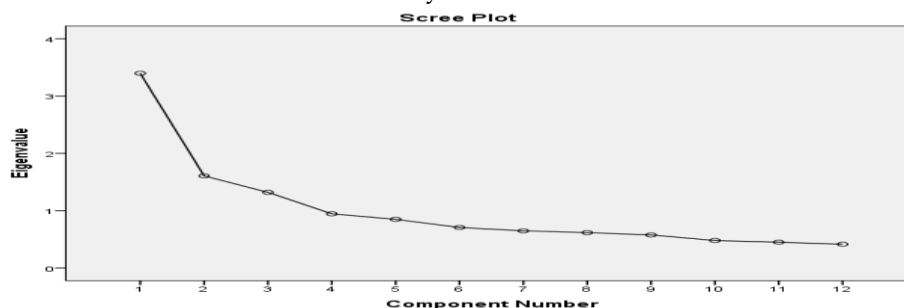
Rotated Component (Factor) Matrix

The idea of rotation is to lessen the number of factors on which the variables under examination have high loadings. Rotation does not really change anything but make the interpretation of the analysis easier. In the table below, we can find that *more attractive brand*, *superior social image*, *Price Fairnesss* and *reflecting Bangladeshi culture in product design* are substantially loaded on factor (component) 1 while *return and change policy*, *promotional offers*, *flexible payment methods*, *membership card benefits* and *reward points* are substantially loaded on factor 2. All the three remaining variables; *cooperativeness of the sales personnel*, *Shop atmosphere* and *safety for shoppers* are substantially loaded on Factor 1. These factors can be used as variables for further research.

Table: 7

Rotated Component Matrix[a]	Component		
	1	2	3
More Attractive Brand	.659		
Superior Social image	.761		
Price Fairness	.545		
Reflecting Bangladeshi Culture in product design	.701		
Cooperativeness of the Sales Personnel			.786
Return and Change policy		.552	
Shop atmosphere			.759
Safety for shoppers		-.460	.492
Promotional Offers	.461	.568	
Flexible Payment Methods		.726	
Membership card benefits		.703	
Reward Points		.660	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

Key Findings

From demographic profile, it is found that majority of the respondents of the study belongs to the age group 18 to 29 years (75.4%), which provides a clue about the most loyal segment of consumers of brand 'Aarong'. Therefore, Aaron should go for different marketing strategic plan for this segment. In occupation segmentation, student segment (51.5%) is the most in number among other occupational groups and seeking most attention from Aarong marketing planners.

This study acknowledged three factors or components that influence consumers' loyalty towards fashion house brand 'Aarong'. Among them Research result found that factor 1 which has been labeled as 'Customer perception about the brand' influence most for shaping loyalty towards 'Aarong' with variance of 28.302%. Factor 1 can be explained by four items:

Brand Attractiveness
Superior Social Image
Price Fairness
Reflecting Bangladeshi Culture in product design
The Factor-2 'Customers' Economic benefits' is explained by five items:
Return and change policy
Promotional offers
Flexible payment methods

Membership card benefits

Reward points

The above five items which is categorized as Customers' Economic benefits (factor 2) also influence consumers loyalty toward Aarong with variance of 13.380%

3rd Factor 'Shopping environment' is explained by three items:

Cooperativeness of the sales personnel

Shop atmosphere

Safety for shoppers

These variables facilitate shopping convenience of the shoppers during shopping in outlets of the Aarong which influence least in determining loyalty to Aarong with variance of 10.994%.

Discussion & Conclusion

As the customers have become more demanding, the fashion designers are working hard to ensure that customer will not only buy products but also, they will buy a story, lifestyle, and emotions with surprises. Result of this research demonstrate how brand loyalty of a renowned fashion house brand is tied up with some important factors. The results of the principal component analysis in the key findings part of the paper show that the reasons for the loyalty toward a certain brand are related to three factors; customer perception about the brand, customers' Economic benefits and shopping environment. Among these factors, the first one which is customer perception about the brand found most important factor to explain customer loyalty. This result constitutes significant guidelines for fashion house brands in Bangladesh to create a superior brand image comparison with other brands through offering better pricing, unique selling proposition like reflecting national culture along with attractive product assortments. Fashion house brands also should create enjoyable shopping environment through providing beautiful decoration of the outlets, smart and co-operative sales executives and safe environment specifically for female customers. Finally, flexible payment methods such as, mobile banking, online banking, debit card and credit card payment should be available in the outlets of apparel brands. This also encourage certain group of shoppers to repeat purchase from the particular brand.

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A study to identify the factors influencing online shopping behaviour of customers in apparel retailing in the state West Bengal in india

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Abstract
With growing access to digital content, consumers today are increasingly updated with latest fashion trends. Online shopping options and virtual showrooms are already revolutionising consumers' shopping journey. Consumer expenditure in India is expected to grow at 12 per cent year-on-year till 2022, driving the consumption of the growing urban population, two-thirds of which live in 400+ tier 2 and below cities. The growing penetration of the internet, social media and e-commerce is now providing the consumers in tier 2 and below cities increased access to brands and products. In order to tap the emerging opportunities, organisations are deploying unique strategies to penetrate new markets and differentiate their offerings. Traditional path to purchase is undergoing transformation with the advent of technology, smartphones and digital assistants, and is expected to be replaced by personalised journeys. New operating models such as Omnichannel and assisted e-commerce could further fuel growth and adoption of online commerce. While online platforms allow convenience, information and assortment, traditional retail allows touch-and-feel and comfort of face-to-face interaction with brand or store representative. In such an evolving and competitive market, it becomes critical to understand consumer expectations and touchpoints during the online purchase journey

The present paper examines the factors influencing online shopping buying behavior of customers in the organized retail apparel market in West Bengal. Based on a customer survey with the help of a standardized questionnaire, having been blended open ended and close ended questions, the paper also delves into the effect of demographics, product related attributes and non-product related attributes on customers behaviour while purchasing online in the organised retail apparel market, using various statistical tools according to the just and requirement appeared in the study.

Factors influencing customers' selection of restaurants in Dhaka, Bangladesh

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Keywords
Quality food, Hangout, Prospective Bride and Groom Meeting, Convenient Location, Brand Name, Couple Dining

Abstract
Restaurant industry is one of the developing regions of Bangladesh which is concerned with the tastes, habits and preferences of the people. The dining practice especially in ready-made food segment has been diversifying very rapidly over the last decade among the people of Dhaka, Bangladesh. The objective of the study is to identify the determinants that influence customers' selection of Dhaka city restaurants. Eating at a restaurant has an impact on the outdoor dining industry in Dhaka which varies in tastes and preferences of the city dwellers. Hence, this study has been sketched to identify the factors influencing the selection of restaurants by the Dhaka city dwellers. Here, some independent variables were picked after reviewing relevant and related literatures of previous studies; and some have been nominated after interviewing the customers. A simple random sampling survey methodology was followed, and 368 completed responses were collected for the study. Statistical tool SPSS 20 was used for data analysis. Factor analysis was used to identify the relationship among the factors influencing the selection of the restaurants. Result shows that the factors such as quality customer perception about the restaurant; core services; additional service and kid's facilities in restaurants are noteworthy for selecting restaurants by Dhaka dwellers for dining at the restaurants. Despite the extracted independent variables from previous literatures, we got some new and logical variables by interviewing our sample respondents in the context of Dhaka, such as hangout, couple dining, prospective bride-groom family meeting, card acceptance, kids' zone which are also found substantial for selecting restaurants of Dhaka city dwellers. The result can guide the marketers and future researchers to cognize the consumer influencing behavior to choose the restaurant and implementing marketing strategies.

Introduction

As Bangladesh is a densely colonized country in the world, currently about 170 million citizens exist here of which 20 million are living in the capital, Dhaka. The country's outstanding economic growth is evidenced by the growing GDP of 6 to 7 percent. This momentous growth has brought in an enormous change in the composition of the country's workforce which is evidenced by the rise of the middle consumer class. As an emerging economy, consumers' disposable income and personal savings are experiencing an optimistic drive that has induced them to go out with families and friends and spend money in the restaurants for dining. Despite the existence of the international franchises like KFC, Pizza Hut etc in Bangladesh, most of the restaurants are local and Bangladeshi owned. According to the law of Bangladesh, restaurant is a business establishment where 30 or more people can be served with foods and drinks in exchange for money. Foods are generally served and eaten at the place, but many restaurants also offer take-out and food delivery services. In addition to that, the development of information technology and media, especially young professionals, businessmen, families, and students are provoked to hangout with friends, families and colleagues in

the restaurants like developed societies. Thus, restaurant business is growing rapidly in Dhaka city of Bangladesh.

Consumer behavior shows the decision-making process of individuals to utilize their valuable resources such as time, money and effort or consumption-related matters such as what they buy, when they buy and how they buy (Priest, Carter and Statt, 2013). It, thus, refers broadly to the study of individuals and the processes consumers like to search, select, use and dispose of products, services, experience or ideas to satisfy their needs as well as its impact on the consumer and society (Priest, Carter and Statt, 2013; Wilkey, 1994). Buying behavior of the consumer is the most important key element of business success.

Appearance and offerings make the difference among restaurants, and it includes a wide variety of cuisines and service models ranging from inexpensive quick service restaurants and cafeterias, to mid-priced family restaurants, to high-priced luxury establishments. Services within the restaurants have increased in today's competitive market and service industries differentiate the delivery of the services and products create positioning through the different communication channels (Wallin Andreassen, 1998). Styles of food consumption may vary due to the differences in culture, climate, socioeconomic status, etc. In fact, the eating habit among the residents of a country may change due to several factors. In Bangladesh, people are moving from rural to urban areas hoping to lift their standard of living. Throughout the last decade, the population of all urban areas in the Bangladesh grew by 38% compared with only 10% growth in rural areas (Bangladesh Bureau of Statistic, Dhaka, 2001). People of city areas in Bangladesh are merely adapted to have their necessary meals from household cooking. As a nation, hospitality is deep rooted into their culture. People take real pride of their food variety and texture. Despite having a very long history and heritage of local cuisines, they are also very open to adopt new tastes into their food menu. Consumers place more trust on their family and friends' recommendation while making a restaurant choice (Mill, 2007). Since customers hold different expectations and perceptions of their different dining experiences in a different restaurant type (Kim and Moon, 2009), they may also have different selection criteria when they decide where to dine out according to the restaurant type.

The intention of this study is to scrutinize the influencing factors which are related to selecting the restaurants of Dhaka city and scrutinize the reasons why the people of Dhaka city visit restaurants frequently. The findings of this research will also help the future researchers and the investors of restaurant to open more profitable restaurant trades.

Research Gap and Projected Contribution

Nowadays, the customers have become more mindful about choosing restaurants and at the same time, restaurants are growing rapidly in Dhaka, Bangladesh. This research will analyze the factors that influence customers' selection of restaurants. Previous researchers focused mainly on demographic and psychographic variables to find out the reasons for choosing restaurants. But in this research, along with customers' demographic and psychographic variables, this study will cover the relevant variables such as factors which characterize restaurant perception; consumer perceived economic benefits and real time restaurant selection benefits. The outcome of this research will not only improve the understanding of the different factors determining customers' selection of restaurants, but also assist in marketing approaches and formulate suitable customer retention policies and more cost- effective marketing programs than others. In this research, variables were selected both from previous researches and face to face customer interaction after dining at different restaurants. Variables like Prospective Bride- Groom Meeting, Kids Zone, Local foods were not addressed properly in previous researches which are considered as more influential factors to pursue customers to select restaurants in Dhaka, Bangladesh. This study fills the gap in this research area by showing how some relevant factors particularly applicable for customers' behavior influence them to select restaurants in Dhaka, Bangladesh. Therefore, this study has chosen following variables for testing their influence on customers' selection of restaurants in Dhaka, Bangladesh. The basis for

selecting variables was identifying common needs and easy to understand so that it can reveal the customers' actual restaurant selection behavior.

X_1 = Cleanliness
X_2 = Waiter's Behavior
X_3 = Available food
X_4 = Prospective Bride- Groom Meeting
X_5 = Kids zone
X_6 = Junk food
X_7 = Fast food
X_8 = Adequate space
X_9 = Quality food
X_{10} = Card acceptance
X_{11} = Convenient location
X_{12} = Brand name
X_{13} = Local food
X_{14} = Affordable price
X_{15} = Taste and preference
X_{16} = Quick service
X_{17} = Hangout
X_{18} = Couple dining

Literature Review

Quick service, family dining, casual dining, dinner house and fine dining are the five categories of restaurants (Walker, 2011, p. 34-40). In quick service restaurants, food and drink are prepaid. Having staffs and food ready to dish up the utmost number of customers within short time is very crucial. Usually fast foods are served at this type of restaurants. Family restaurants offer simple menus and provide service for the family market segment. Relaxing lifestyles, signature food items, wine service, bar and comfortable décor are offered by casual restaurants. Expensive cuisine and beverages such as wine, elegant service and luxurious ambiance are offered at find dining. Other sources (Jackson, 2011; Walker, 2011; Knutson, 2000) point out that these restaurants are often classified under fast service restaurant, although all fast service restaurants do not serve fast food. The major distinctiveness of quick-service restaurants are fast service, low-cost food items, plain decoration, limited menu normally displayed on a wall, and convenience.

Customer Satisfaction and Service Quality

According to Hansemark and Albinsson (2004), "satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the dissimilarity between what customers anticipate and what they receive, regarding the accomplishment of some need, goal or desire". According to the definition of satisfaction by Kotler (2000), "an individual's feeling of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectations". Hoyer and MacInnis (2001) said that satisfaction can be linked with feelings of acceptance, happiness, relief, excitement, and delight. Here, two concepts are visible: "satisfaction is generally viewed as a broader concept service quality is a component of satisfaction" (Zeithaml and Bitner, 2003). Customer satisfaction is defined here in Oliver's (1997) terms: that it is the consumer's accomplishment response. It is a decision that a product or service feature, or the product or service itself, provides a pleasing level of consumption related accomplishment.

Consumer Behavior

Engel, Blackwell and Miniard (1995) presented the most recognized model of consumer purchase decision- making. This model divides the consumer purchase decision making process into

five stages: (1) problem recognition, (2) information search, (3) alternative evaluation, (4) purchase decision, and (5) post- purchase behavior.

Consumers' Preferences on Fast Food

In some societies, consumer's preference on fast food is very strong. Increasingly the numbers of working families are growing worldwide (Stamoulis, Kostas G. et al., 2004). This allows the families less time to cook and eat at home. Moreover, we need to mix with people around us, colleagues and friends, neighbors more than before. People tend to have food items away from home. For time shortage, modern nuclear families tend to like better convenient, quick meals to rather traditional long meals. Here nuclear family refers to the type of family consisting of only husband, wife and one to two children. Today people have a preference to have dinner in front of televisions with the family members than to have dinner at the dining table. Moreover, ever more families tend to hold programs i.e. birthdays, anniversaries, other special occasions etc out of home.

Cleanliness

Cleanliness is a fundamental aspect of the restaurant industry. As dining-out rate has been amplified, the issues of restaurant cleanliness and food safety have become ever more emphasized from customer viewpoint. Many studies found that cleanliness is a significant factor in a customers' evaluation of restaurant quality, which can affect customers' level of satisfaction (Zeithaml, Parasuraman et al. 1990; Pettijohn 1997; Qu 1997; Becker, Murrmann et al. 1999; Bienstock, DeMoranville et al. 2003; Threevitaya 2003; Aksoydan 2007; Barber and Scarcelli 2009; Jang and Liu 2009; Barber and Scarcelli 2010).

Waiter's Behavior

Waiters are food service professionals who take orders and cater to the food and drink needs of customers with their service behaviors in a casual or fine dining restaurant. It refers to a wide range of behaviors with important implications for organizational functioning that share the central notion of intent to benefit others through service (Brief and Motowidlo 1986). Waiters are service employees and restaurants are often very fast-paced work environments where the waiters' job is to serve customers. Constant movement, loud conversations and noises and the perpetual process of taking orders, delivering food and drinks, and taking payments are the main parts of work for the waiters.

Food Availability

Food availability refers to what healthful foods and beverages are sold or served at retail food outlets such as restaurants (Sharkey and Horel 2009). According to Morland, Wing and Diez (2002), people make food choices based not only on personal preference but on environmental factors such as food access, availability, and affordability.

Prospective Bride- Groom Meeting

In Bangladeshi society, weddings are still prearranged and finalized by the families of the bride and the groom. But before such an event culminates in a successful marital relationship, there is a dreaded first meeting between the bride and groom along with the families. The first meeting is elementary in deciding whether to go forward with the relationship or to look at other prospects. Today, meeting at restaurants is the best way for ice breaking to get to know the background of any person before the actual meeting. Directly talking with each other and the family convey a lot about a person, and it becomes very easy to arrange the meeting at a restaurant.

Kids' Zone

Nowadays the people at parenthood think that eating out builds social skills and manners in children. It is also a good way to reveal social cues. Being in any public place, not just in *restaurants*, can help *kids* improve their social skills and impulse control. It is said in an article that through making the restaurant kids friendly, a restaurant owner may increase traffic up to 25 % through

using creative kids' friendly restaurant ideas to make the place one of the favorite family restaurants (Aida 2019).

Junk Food

Junk foods are easy to make and easy to consume. They are low in nutritional value and have only lying fat in it causing ill effect on the health of consumer (Bhaskar 2012). The term 'Junk food' was coined by Michael Jacobson, director of Center for Science in 1972 in the public interest who wanted to raise public attention about the issue of foods with a high caloric value and a low nutritional value.

Fast Food

A fast food restaurant is a specific type of restaurant that serves fast food cuisine and has minimal table service (N Sumathi 2017). Among the general public, fast food restaurants have quickly become some of the most popular places to dine. Regardless young people or senior citizens, people flock to these restaurants for the cheap but delicious food.

Adequate Space

The concept of personal space is well recognized (Hall 1966), but the amount of personal space that a person needs varies according to individual, situation, and culture. People usually need greater personal space with strangers, and real discomfort occurs if someone violates that space without good reason (Hall 1966). Nevertheless, personal space limits are not consistent in shape. Having enough personal space is an important feature of customers' comfort with their environment. The context of the dining experience (e.g., a business lunch, a family occasion) is likely to be a key factor in consumers' preferences for table spacing and their subsequent behaviors (Stephani 2011).

Quality Food

There are three key dimensions of restaurant service quality: food quality, physical environment (ambience) and employee service (Dutta, Parsa, Parsa, & Bujisic, 2014; Ryu, Lee, Kim, & Woo, 2012). Ryu et al. (2012) emphasized on the significance of food quality as a measure of customer satisfaction in the restaurant industry. Consequently, five aspects of food quality were adopted from Ryu et al. (2012), explicitly: the food is fresh, the food is delicious, the food is nutritious, there is a variety of menu items and the smell of the food is attractive. Qin and Prybutok (2009) explored the latent dimensions of service quality and examined the relations between service quality, food quality, perceived value and behavioral intentions in fast-food restaurants.

Card Acceptance

Providing clients with more options make them pleased and satisfied with the business, making the restaurant owner satisfied as well. This will help the restaurant business grow more quickly, attaining a stronger placement in the market. Simultaneously, it can contribute to an optimistic image on the business.

Harper (2014) examined the factors which had impact on individuals' adoption to alternative payment systems and he found some of the most prominent factors for the acceptance of a new payment technologies. Also, the security was an important factor in the use of new payment technologies.

Convenient Location

The location of a restaurant plays a vital role in its success. It is an essential element of the restaurant business strategy as the location of the restaurant conveys a lot about its image. It also influences the food variations and layout of the restaurant. Once setup, its food variation can be changed accordingly, prices can be adjusted, communication can be improved but it is very difficult to change the location.

Secondly, location decisions have strategic importance because they can be used to develop a sustainable competitive advantage. If a restaurant has the best location, that is, the location that is

most attractive to its customers, competitors are relegated to occupying the second-best location. (Levy et al, 2012)

Brand Image

Brand image is brought to the consumer's mind by the brand association (Keller, 1993). Brand image can be also defined as consumer's thoughts and feelings about the brand (Roy & Banerjee, 2007). Aaker (1991) says that brand image could be a set of connection which is significant to the consumers. Based on Bearden & Etzel (1982) as well as Park & Arinivasan (1994) point of view, brand image is closely related to the uniqueness of a product classification. According to Hsieh & Li (2008), strong brand image does create superior brand messages of a brand over the rivalry brand. As a result, customer's behavior will be affected and determined by brand image (Burmann et al., 2008).

Since it involves human performance in delivering the quality foods and services to the customers, branding image is critical in the restaurant industry. Different customer attitudes and needs, creating a uniform brand image through the attributions are crucial in maintaining and increasing customers' level of patronization and assure their loyalty and increase their trust in purchase decisions.

Local Food

Customers demand for food that is locally produced, marketed and consumed is generating improved interest throughout Bangladesh. According to Martinez (2010), there is no generally established definition of "local" food. Though "local" has a geographic association, there is no agreement on a definition in terms of the distance between production and consumption. Definitions connected to geographic distance between production and sales vary by regions, companies, consumers, and local food markets. Definitions based on market arrangements, including direct-to-consumer arrangements such as regional farmers' markets, or direct-to-retail/foodservice arrangements such as farm sales to schools, are well-recognized categories and are used in this testimony to present the information on the market development of local foods at restaurants.

Affordable Price

Customers will perceive high price reliability if there are no hidden costs, if prices do not change unexpectedly (Diller, 1997). Reliable prices would enable suppliers to plan their activities and reduce the risk of financial loss when the prices they receive are relatively stable (Somogyi & Gyau, 2009). Price consistency is also related to reference prices which are based on the past price of the same product at different occasions (Mayhew & Winer, 1992). According to this, the relationship between price and price reliability customer can be addressed.

Taste and Preference

The influence of culture on food taste and preference is massive. According to Len, Bristol and Pamela (2001), food is not only the source of nourishment but also for developing trading and cultural links between nations. In modern world, the way we display, prepare and cook food can show the fashioning of tastes and preferences. Artistic design and media manipulation such as advertising methods and social status and prestige to the extent of uplifting to a fashionable cult status are linked with food taste and preference. Since culture influences the food taste and preference, an understanding of culture is a good starting point. The word "culture" itself varies as the people who try to define it. The Longman Dictionary of the English Language (1984) defines culture as: "the typical behavior, customary beliefs, social forms and material traits of a racial, religious or social group" and "the enlightenment and excellence of taste acquired by intellectual and aesthetic training, refinement in manners, taste and thought."

Quick Service

The quick service influences the post purchase behavior such as food choices, post dining satisfaction level and future loyalty of the customers in terms of restaurant business. According to

Kevin, Stephen and James (2018), Food quality, service quality, and physical surroundings are directly related antecedents to consumers' loyalty towards a quick service restaurant (Gronroos, 1982; 1984; Keillor et al, 2004; Mason et al., 2016). According to Kenneth (2017), quick service restaurants must be perceived as offering enough value to customers for long term success. One of the major factors that influence customer patronage of food restaurants is the employee service speed (Sulek and Hensley 2004).

Hangout

Nowadays the people who move in groups think that eating out together builds social relationships and understanding. It is also a good way to spend quality time especially at restaurants. Being in hangout at any public place, not just in *restaurants*, can help *people* improve their social relationships and peer group bonding. It is said in an article (Priscilla 2015) that the forms of dining follow the forms of friendship. Both are highly variable.

Couple Dining

In Bangladeshi society, relation partners influence consumer eating patterns. The couples in a relationship like to move around and to hang out at restaurants. The couple dining is elementary in spending good time with the partner. Today, meeting at restaurants is the most common way for couple dining and having daily chitchats. According to Jonathan, Blair and Virginie (2018), romantic relationship motives of formation and maintenance influence eating behaviors. Specifically, females are prejudiced by the eating patterns (i.e., healthiness/ unhealthiness) of males when relationship formation motives are active, while males are prejudiced by the eating patterns of females when relationship maintenance motives are active.

Objectives of the Study
Broad objective

Products and services accessible at restaurants vary to a large degree and different customers look for different mix of products and services. This paper attempts to summarize those variables into smaller number of factors by analyzing the data of consumer's responses through factor analysis. Key purpose of this article is to find out the factors affecting selection of upscale restaurants at Dhaka city in Bangladesh.

Specific Objective
1. To observe the demographic characteristics regarding restaurant selection in Dhaka, Bangladesh.
2. To identify the factors and variables which are related to the consumer preferences of the food products.
3. To explore the criteria the consumers, use for selecting restaurant.
4. To provide suggestions to the sellers and the policy makers of food industry.

Research Methodology

This article used a mixture of qualitative and quantitative research to find out and analyze eighteen variables (factors) which determine customers' selection of restaurants in Dhaka, Bangladesh. At first the qualitative study is conducted to identify independent variables which customers consider important at the time of selecting restaurants for dining and this is relevant to the research purpose. Then quantitative research was conducted to collect, analyze the data and test the hypothesis. The survey was conducted on 400 respondents relevant to the research purpose and received 368 completed survey data. Descriptive research including frequencies was used to describe demographic variables of the respondents. For assessing the factors, this research used Likert Summated Scale and the statistical tool used is Principal Component Factor analysis. This instrument (questionnaire) of this study comprised of two main part: the first part of the questionnaire covered demographic information of the respondents such as gender, age, occupation and marital status. In

second part, eighteen variables were selected for this study in order to test their influence on customers' selection of restaurant in Dhaka, Bangladesh. The respondents were given a series of statements that measured their degree of agreement towards these variables. An online self-administrated questionnaire was developed, and the items were calculated on a 5-point Likert Summated Scale with 1 representing low score (strongly disagree) and 5 representing a high score (strongly agree).

Research Questions
RQ1: Does quality food have influence on customers' selection of restaurants in Dhaka, Bangladesh?
RQ2: Does hangout suitability have influence on customers' selection of restaurants in Dhaka, Bangladesh?
RQ3: Does arrangement for prospective bride-groom meeting have influence on customers' selection of restaurants in Dhaka, Bangladesh?
RQ4: Does convenient location have influence on customers' selection of restaurants in Dhaka, Bangladesh?
RQ5: Does brand name have influence on customers' selection of restaurants in Dhaka, Bangladesh?
RQ6: Does couple dining have influence on customers' selection of restaurants in Dhaka, Bangladesh?

Data Analysis and Interpretation
Respondents' Demographic Profile

Table: 1

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
	Female	180	48.91	48.91	48.91
Valid	Male	188	51.09	51.09	100.00
	Total	368	100.00	100.00	

Table1 portrays a balance in gender ratio among respondents, where majority of the respondents are male that is 51.09% out of a total of 368 respondents whereas 48.91% respondents are female.

Table: 2

Occupation		Frequency	Percent	Valid Percent	Cumulative Percent
	Student	118	32.07	32.07	32.07
	Service holder	87	23.64	23.64	55.71
Valid	Business	63	17.12	17.12	72.83
	Housewife	73	19.84	19.84	92.67
	Other	27	7.33	7.33	100.00
	Total	368	100.00	100.00	

About the occupation in Table 2, more than 32% (32.07%) of the respondents are students and more than 7% (7.33%) of the respondents fall in other categories.

Table: 3

Age Group		Frequency	Percent	Valid Percent	Cumulative Percent
	18 to 28	159	43.21	43.21	43.21
	29 to 39	140	38.04	38.04	81.25
Valid	40 to 50	66	17.93	17.93	99.18
	50 and above	3	0.82	0.82	100
	Total	368	100.00	100.00	

About the age group in Table 3, more than 43% (43.21%) of the respondents are aged 18 to 28 years old, followed by aged 29 to 39 years old (38.04%). In addition, over 17% (17.93%) of the respondents are aged between 40 to 50 years old and 0.82% of the respondents are aged 51 or above.

Table: 4

Marital Status					
Valid		Frequency	Percent	Valid Percent	Cumulative Percent
	Single	145	39.40	39.40	39.40
	Married	223	60.60	60.60	100.00
	Total	368	100.00	100.00	

Table4 portrays marital status ratio among respondents, where majority of the respondents are married that is 60.60% out of a total of 368 respondents whereas 39.40% respondents are single.

Reliability Testing

Table: 5

Reliability Statistics	
Chronbach's Alpha	No of Items
0.706	18

For the purpose of checking internal consistency of the independent variables selected, Chronbach's Alpha test was performed, and the alpha value for 18 items was found 0.706, which is considerable reliable. Chronbach's Alpha Reliability Test allows a researcher to test the reliability of the research instruments (variables). According to Hair et al. (2003), coefficient alpha also referred as Chronbach's Alpha is shown as a number between 0 and 1. According to Schuessler (1971), an alpha value greater than 0.60 is considered reliable. In other words, based on the result of Chronbach's Alpha, the variables have good internal consistency. It also means that all the 18 independent variables selected are reliable and valid to reveal the factors that influence the customers' selection of restaurants in Dhaka, Bangladesh.

Factor Analysis

Factor analysis is used to reveal the inter-relationships among variables and concentrate those inter-correlated variables into few factors. Thus, researchers use factor analysis to find out whether several variables are correlated with each other or not. The Kaiser-Meyer-Olkin (KMO) measurement of sampling adequacy is a statistical tool used to test the suitability of factor analysis. In result, high score indicates factor analysis is more appropriate and low value implies that factor analysis may not be appropriate. However, any value more than 0.60 is considered adequate (Pallant, 2001).

There is no rule of thumb to justify how many cases are needed for running factor analysis. Fiedel (2005) said in a research that usually over 300 cases for sampling analysis is probably adequate. There is universal agreement that factor analysis is inappropriate when sample size is below 50. In this research, 368 samples are taken for continuing the research methodologies.

Table: 6

KMO and Bartlett's Test		
Kaiser- Meyer- Olkin Measure of sampling Adequacy		.822
Bartlett's Test of Sphericity	Approx. Chi-Square	3127.515
	Df	153
	Sig.	.000

For KMO and Bartlett's Test, Kaisen (1974) recommended 0.5 as minimum (barely accepted), values between 0.7-0.8 as acceptable, and values above 0.9 are superb. In Table 6, the KMO measure is 0.822 which is reasonably satisfactory for factor analysis to continue.

In Bartlett's test, this research needs to reject the null hypothesis for uncontrolled variable or non-identity matrix. A significant level less than 0.05 specify that the variables in this analysis have

considerable relationship between each other. From the above table, we can observe that the Bartlett's test of sphericity is perfectly significant as it is 0.000 which means that correlation matrix is not an identity matrix. This result is good enough to reject the null hypothesis and suggests proceeding with a factor analysis.

Total Variance Explained

Table: 7

Compone nt	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.650	25.831	25.831	4.650	25.831	25.831
2	3.732	20.732	46.563	3.732	20.732	46.563
3	2.570	14.275	60.838	2.570	14.275	60.838
4	1.077	5.982	66.820	1.077	5.982	66.820
5	.941	5.226	72.046			
6	.728	4.043	76.089			
7	.703	3.907	79.996			
8	.559	3.105	83.101			
9	.545	3.030	86.131			
10	.443	2.459	88.590			
11	.421	2.341	90.931			
12	.357	1.985	92.915			
13	.308	1.711	94.627			
14	.253	1.406	96.032			
15	.204	1.132	97.164			
16	.196	1.091	98.255			
17	.179	.993	99.248			
18	.135	.752	100.000			
Extraction Method: Principal Component Analysis.						

Table 7 is the summarized table of the factor analysis, which explains the number of factors loaded, the percentage of variance, and the factor loading to the variables. In the rightest column items are categorized according to their nature (factor). From the table we can see maximum 25.831% variables can be explained by Factor 1 which has been named as 'Customer perception about restaurants. Factor 2 which has been named as 'Core Services', Factor 3 which has been named as 'Additional Service' and Factor 4 which has been named as 'Kids Facilities' have explained variables by 20.732%, 14.275% and 5.982% respectively.

Key Findings

Majority of the respondents of the study belonged to the age group 18 to 50 years (99.18%) which gives an indication about the likely segment of consumers for restaurants. This study excluded respondents who are under 18. The reason behind keeping them out is that, 1 to 17 age group is not relevant to the purpose of this study. Different research will be done in future on that group (children).

In the occupation category, it can be highlighted that 72.83% of sample were students, service holders and businesspersons.

Table: 8

Rotated Component Matrix[a]	Component			
	1	2	3	4
Cleanliness		.688		
Waiters Behavior		.730		
Available Food		.747		
Prospective Bride andGroomMeeting		.548		
Kids Zone				.822
Junk Food	-.412			.423
FastFood		.612		
Adequate Space			.886	
Quality Food	.841			
Card Acceptance			-.735	
ConvenientLocation		.477		
BrandName	-.431	.773		
Local Food	.889			
AffordablePrice		.409	.735	
Taste and Preference	.894			
QuickService		.602		
Hangout	.840			
CoupleDining			.761	
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 5 iterations.				

This study acknowledged four factors or components that influence customers' selection of restaurants in Dhaka, Bangladesh. Among them, research result found that Factor 1 which has been labeled as 'Customer perception about restaurant' influences most of the customers to select restaurants with variance of 25.831%. Factor 1 can be explained by four items:
Quality Food
Local Food
Taste and Preference
Hangout

The Factor 2 which has been labeled as 'Core services' also influences the customers to select restaurants with variance of 20.732%. Factor 2 can be explained by 8 items:
Cleanliness
Waiter's Behavior
Available Food
Prospective Bride and Groom Meeting
Fast Food
Convenient Location
Brand Name
Quick Service

The Factor 3 which has been labeled as 'Additional Service' also influences the customers to select restaurants with variance of 14.275%. Factor 3 can be explained by 3 items:
Adequate Space
Affordable Price
Couple Dining

The Factor 4 which has been labeled as 'Kids Facilities' also influences the customers to select restaurants with variance of 5.982%. Factor 4 can be explained by 2 items:

Kids Zone
Junk Food

Discussion &Conclusion

As the customers have become more demanding, the restaurant entrepreneurs are working hard to ensure that customer will not only purchase services but also, they will buy quality moments and experiences, lifestyles and emotions with surprises. Result of this research demonstrates how the selection of restaurants is tied up with important factors. The results of the principal component analysis in the key findings part of the paper show that the reasons for selecting restaurants in Dhaka, Bangladesh are related to four factors: customer perception about restaurant, core services, personalized service quality and extra facilities. Among these factors, the first one which is customer perception about restaurant found the most important factors to explain customers' choice. This result constitutes significant guidelines for restaurant business startups in Dhaka, Bangladesh through offering quality foods, local foods, tasty and preferable foods and hangout facilities. Restaurants should also keep the consistent qualities of cleanliness, waiter's behavior, availability of foods, fast foods, convenient location, brand name, quick service and scopes for prospective bride and groom meeting. Finally, personalized service qualities like adequate space, affordable price and couple dining opportunity; and extra facilities like kids' zone and junk food can enhance the chance of selection by the customers. This also encourages certain group of food lovers to repeatedly visit a restaurant.

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Factors influencing customers' buying decisions of mobile phone in Dhaka, Bangladesh

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Keywords
Consumer buying behavior, smart phones, features of mobile phones, factors affecting buying behavior, perceived purchase satisfaction.

Abstract
Mobile phone has diversified usages to different users in accordance with their necessities. With the dramatic increase in mobile phone usage in recent years, when deciding to buy a mobile phone, people consider different factors. This study has put efforts to uncover the underlying factors which influence customers in choosing mobile phones. Data were collected from those who people live in Dhaka city maintaining equal ratios of various groups like male, female, businessmen, employees, students and others (mostly student). The convenient sampling method was used to select the desired respondents.

The study was undertaken on 305 mobile phone users of Dhaka city, Bangladesh. The data was analyzed using factor analysis and Cronbach's alpha. With the help of factor analysis, twelve decision factors of consumer buying behavior were derived. On these twelve factors a factor analysis was performed with perceived satisfaction of consumers in terms of buying decision as an independent variable. The findings showed that "social factor" has the highest positive impact on the satisfaction followed by brand, advertising & price.

The study provided useful insights into the behavior of consumers buying mobile phones.

Introduction
At the beginning of the 1990s, mobile phones were first launched in Bangladesh with a very small penetration rate. At that time, very few people were able to afford mobile phones as they faced different kinds of barriers. In 1997, Nokia began operating in this country and currently operates several sales outlets in Bangladesh. Siemens and Samsung began operating after the launch of their mobile phones. In this modern era, a wide variety of other services such as email, text messaging, MMS, internet access, audio and video, short range wireless communications (Inferred, Bluetooth), gaming etc. are also supported by the mobile phones. In addition to these, it also offers more general computing capabilities for smartphones. Many mobile phone brands are available in Bangladesh e.g. Apple, Nokia, Samsung, Sony, HTC, Panasonic, Motorola, LG, Symphony, Micromax, Walton etc. and consumer choose their preferred mobile phone from this pool. The development of mobile phones and technologies has been a long history of innovation and progress has grown due to dynamic changes in consumer needs and preferences. Among these developments, mobile phone devices have had one of the fastest household adoption rates in modern technology in the world. Mobile phones have become an integral part of human daily life and personal communication across the globe. In today's highly competitive mobile phone market, manufacturers are constantly struggling to find additional competitive edges and differentiating elements to convince consumers to choose their brand instead of a competitor.

Various studies have been conducted to identify factors that make companies better than their competitors to influence the decision to purchase customers. Consumers' of mobile phone found throughout the world greatly influenced by those different factors affecting mobile phones purchase

decision. These factors may relate to the characteristics of the consumer and the characteristics of mobile phones. This leads mobile phone companies to come up with a variety of mobile devices with different brands and features. Various research studies have been conducted to identify factors affecting the choice of mobile phones for consumers. These studies have identified several items as a determining factor in the decision to purchase. These factors include price, features, quality, brand name, durability, social factors, etc.

Research Gap and Projected Contribution

Although this study contributes to literature and business practice, it is not free of limitations. This study was qualitative in nature and focused explicitly on a deeper understanding rather than generalization. Second, the sample used in this study was enough for the purposes of this study and allowed reasonable conclusions to be drawn. However, it cannot be considered representative of other potential new studies that could include larger and more representative samples within Bangladesh to reinforce current findings. Finally, the current study focused on a country. Further research should include investigations in other countries which are at a similar stage of mobile retailing, and include cross-national studies which compare consumer experience, with a view to verifying and extending current findings.

Literature Review

There are many social and interpersonal factors that influence customers to decide on any product, and so do mobile phones. Consumer behavior is affected by several variables, ranging from personal motivations, needs, attitudes and values, personality characteristics, socio-economic and cultural backgrounds, age, sex, professional status, and social influences of various kinds exerted by family, friends, colleagues and society (Moschis, 1976).

In a recent paper, Liu (2002) analyzed factors affecting the brand decision in the mobile phone industry in Asia. The choice of a mobile phone has been shown to be characterized by two distinct attitudes towards brands: attitudes towards the mobile phone brand and attitudes towards the network. Customers ' choice of a mobile phone brand is largely affected by new features more than size. This trend of choice is towards better-capacity phones and larger screens.

According to the latest report from the In-Stat / MDR (2002) research institute, colour screens are now pushing customers into shops to purchase new mobile phones and associated products, such as PDAs (personal digital assistants). The conclusion is that the customer's preference parameters rely more on color display than on higher data levels or new features, even though the analysis of other research did not indicate the significance of color display. The study further suggests that consumers are rapidly seeking color display handsets, and it is anticipated that all cell phones and PDAs will be fitted with a color display in the 21st century. Throughout their work on mobile phone customer choice, Dorsch, Grove and Darden (2002) observed that, from the point of view of advertising, the user purchasing cycle can be categorized as a five-step problem-solving system, such as: need identification, knowledge discovery, alternative analysis, buying behavior and post-purchase review. This five-step decision-making process is best suited to the problem-solving behavior of purchasing decisions or complex decision-making processes. Similarly, the purchase decision for mobile phones follows the same purchase process, but in some cases the decision may also be affected by the symbolic preference associated with certain brands.

Some general conditions are considered before purchasing mobile phone consumers. In view of the traditional problem of solving purchasing process behavior, it is almost always the case that consumers are searching for information before making a purchase decision. There is also a common behavior that the consumer's purchase decision is guided by previous preferences for certain specific alternatives. It shows that customers are formulating their purchase decision on the basis of the limited information search activity they have carried out (Moorthy, Ratchfordand, Talukdar, 1997) rather than a detailed assessment of all possible alternatives (Chernev, 2003) In addition to the information search evaluation of alternatives, there is an important activity that determines

consumer choice (Laroche, Kim and Matsui, 2003). They argued that the purchase decision of the customer is influenced by ' cognitive heuristics ' or, in simple terms, the consumer chooses his perceived brand based on his experience if it fulfils his perceived values. Swait and Adamowicz (2001) have found that a lot of decision-making behavior by purchasers can be different from one individual to another because customers can use different approaches to make their choices using mathematical modeling instead.

The decision of the prospective purchaser to purchase a product or brand may be influenced by personal preferences and the prospect of purchase may have a greater impact on the choice of brand if the customer has little knowledge or experience of the product in the International Journal of Value Management and Supply Chains (IJMVSC) Vol.5, No. 2, June 2014. The conventional problem-solving technique used to make purchase decisions that affect buyers ' preferences may not be the best approach under all circumstances. Mobile phone choice can be either based on functional / primary / rational factors or can be based on emotional factors such as: fun, enjoyment, excitement, etc. (Batra and Ahtola, 1990).

There may be a lot of consumer choice with both rational features (e.g. communication, time management) and emotional features (e.g. games, music, camera, and application). The younger the user, the more emotional rather than rational features he would prefer on mobile phones (Wilska, 2003). Customers ' decisions to buy mobile phones rely on both logical and emotional factors. Requelme (2001) conducted an experiment to determine the amount of self-knowledge that customers have when selecting between mobile phone brands.

The study was based on six key attributes (telephone features, access costs, roaming charges, mobile to mobile phone rates, call rates and free calls) related to mobile phone purchases. The International Journal of Value Management and Supply Chains (IJMVSC) Vol.5, No. 2, June 2014 has little knowledge or experience of the product. The traditional problem-solving strategy used to make buying decisions that affect consumers ' desires may not be the best approach under all circumstances. Mobile phone choice can be either based on functional / primary / rational factors or can be based on emotional factors such as: fun, enjoyment, excitement, etc. (Batra and Ahtola, 1990).

Social Factor
This is the first variable that describes 39.97 per cent of the total variability. Most of the respondents take suggestions from their peers, colleagues, family members and neighbors before purchasing mobile phones. This is the most important factor.

Price
This is the second factor capable of describing 12.25% of the overall variability. The second cost factor covers all the price-related factors that consumers weigh when buying mobile phones. This notes that the Dhaka City Customer Psychology that affects the purchaser's decision to purchase a mobile phone.

Durability
It's the third most important variable. 10.60 percent of the total variability can be clarified. Durability facilities are considered when customers purchase mobile phones.

Features
It is the fourth factor that explains 7.69 percent of total variance. The results showed that the importance of new technology to customers is an important variable and a driving force which drives them to make a new phone purchase decision.

After sales service
This is the fifth factor which explains6.21 percent of total variance. People have found a lot of good behavior after having a good phone relationship that generates a positive image of the customer's mind.

Popularity of the Brand

It's the variable which carries 4.81 percent of total variance and it could be said that popularity of the brand can play big role while purchasing a mobile phone.

Advertisement

The eight factors explain 2.28 percent of total variance. It shows that customers also make their purchasing decision based on advertisement aired in various media.

The other variance included the review rating, trendy phone, and warranty, beneficial in daily life. This carries 3.62, 3.67, 3.04, and 2.02 percent of total variance

Objectives of the Study

1. To find out the factors that influence consumer buying behavior of mobile phone in Dhaka
2. To identify the demographic characteristics of consumers who buy mobile phone in Dhaka
3. To make some recommendation for the marketer in mobile features in Dhaka city.
4. To study the influence of decision factors on the perceived satisfaction of consumers with respect to mobile phone buying decision.

Research Methodology

This study was conducted to determine the factors that affect the decision of people to buy mobile phones. Primary and secondary data were collected from appropriate data collection sources. A standardized questionnaire with five points (Likert scale) was used to collect the opinions of the respondents. Convenience sampling approach was used to pick the respondents A maximum of 200 respondents from whom 155 were interviewed were flawless and therefore used for data analysis. For data analysis, factor analysis and descriptive statistical methods were used with SPSS. After evaluating several previous researches, we selected the following variables for analysis. The basis for selecting the variable was to identify common factors and to be easy to understand so that authentic opinion can be revealed to people.

a1. Recommendation from others
a2. Price
a3. Durability
a4. Features and designs
a5. After sales
a6. Brand name
a7. Advertisement
a8. Review rating
a9. Trendy
a10. Warranty
a11. Beneficial in daily life
a12. Popularity of brand

Data Analysis and Interpretation
Frequencies

The data presented in the above table indicate that the sample is equal with both male and female respondents. the precedent of male is 69.7 percent and female are 30.3. Age analysis of respondents indicates that most of the respondents fall in the age group of 18 to 28 years. Occupation shows that most of the respondent is student 31.6.

Table: 1

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	47	30.30	30.30	30.30
	Male	108	69.70	69.70	100.00
	Total	155	100.00	100.00	

Table: 2

Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	49	31.60	31.60	31.60
	Service holder	32	20.60	20.60	52.30
	Business	29	18.70	18.70	71.00
	Housewife	22	14.20	14.20	85.20
	Other	23	14.80	14.80	100.00
	Total	155	100.00	100.00	

Table: 3

Age Group					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 to 28	78	50.30	50.30	50.30
	29 to 39	60	38.70	38.70	89.00
	40 to 50	10	6.50	6.50	95.50
	50 and above	7	4.50	4.50	100.00
	Total	155	100.00	100.00	

Reliability Testing

Table: 4

Reliability Statistics	
Chronbach's Alpha	No of Items
0.857	12

The alpha coefficient for the four items is .857, suggesting that the items have relatively high internal consistency. (Note that a reliability coefficient of .70 or higher is considered "acceptable" in most social science research situations.

Factor Analysis

Table: 5

KMO and Bartlett's Test		
Kaiser- Meyer- Olkin Measure of sampling Adequacy		.845
Bartlett's Test of Sphericity	Approx. Chi-Square	729.430
	Df	66
	Sig.	.000

Under KMO chart/table, if Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy's result is 0.50 or more than 0.50 then it's significant result. Our result is .845 so it's significant.

Total Variance Explained

Table: 6

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.769	39.968	39.968	4.796	39.968	39.968
2	1.470	12.250	52.218	1.470	12.250	52.218
3	1.272	10.601	62.819	1.272	10.601	62.819
4	.922	7.686	70.505			
5	.745	6.208	76.714			
6	.577	4.807	81.521			
7	.498	4.153	85.674			
8	.435	3.623	89.297			

9	.404	3.366	92.663			
10	.365	3.038	95.701			
11	.273	2.275	97.977			
12	.243	2.023	100.000			
Extraction Method: Principal Component Analysis.						

Applying SPSS, the principal component analysis (PCA) was carried out to explore the underlying factors associated with 12 items. The above table shows that 62.82% of variation in mobile purchasing by the customers is explained by three factors.

Table: 7

Rotated Component Matrix[a]			
	Component		
	1	2	3
The social factors have a positive influence on the consumers mobile buying decision	.585		.515
Price has a positive influence on customer mobile phone buying decisions			.762
Durability has a positive influence on customer mobile phone buying decision			.686
Mobile phone features influence customer decision to acquire mobile phone	.791		
After sales service influence customer decision to acquire mobile phone		.634	.342
Popularity of the brand is an important factor for you while making decision to purchase a phone	.609		.342
Image of brand is an important factor for you while making decision to purchase a phone	.770	.383	
The review rating given for any phone affect my purchase decision	.701	.491	
People prefer to buy a phone that is trendy	.849		
Presence of brand warranty for a phone helps me decide favorably towards buying that phone		.744	
People decision to buy a smartphone is influence by advertisement and other media		.792	
Purchasing of smartphone is beneficial for our daily life	.624		
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

Discussion & Conclusion

The study was aimed at figuring out the underlying factors that play a role in deciding the brands when customers buy mobile phones. From the previous discussion, it has been seen that many factors are weighed by consumers before selecting a mobile phone brand. Some of the variables significantly influence the decision of buyers, while others have a relatively low impact on the decision to buy. It was found at the time of the survey that consumers were expecting different types of facilities. But this research work does not answer the needs of the consumer. Rather, it has tried to focus on the issues that customer's evaluation in the current market scenario. Research has shown that many factors are selection criteria for mobile phones. Not necessarily all variables influence a person in the same way and to the same extent. When choosing mobile phone brands, most of the factors considered by customers include social factors, pricing and operating facilities, brand image.

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An empirical study on the factors influencing online shopping behavior

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Keywords

Abstract

Online shopping is getting popular day by day since consumers can shop whenever, wherever and whatever they like. The present study aims at determining the factors influencing online shopping behavior. It also tries to examine the mediating effect of technological knowledge on the relationship between the determining factors and online shopping behavior. Data have been collected from 390 respondents who have online shopping experiences. The data of this study have been collected from the respondents with a structured questionnaire survey with a five-point likert scale. Partial Least Square Structural Equation Modeling (PLS SEM) technique with the support of smart PLS 2.0M3 software has been used for analyzing the collected data. The data analysis findings reveal that convenience attitude is the most significant followed by trust, subjective norm, technological knowledge and perceived usefulness in influencing online shopping behavior. On the other hand, technological knowledge partially mediates the relationship between attitude and online shopping behavior; and relationship between perceived usefulness and online shopping behavior. The findings of this study might be helpful for the firms doing online business or intending to ship their business from brick and mortar to click and mortar.

Introduction

Research interest on online shopping has gained much attention as e-commerce has potential growth in recent years and thus many successful retailers are seeking for global penetration especially through e-commerce. E-commerce is the easier and faster way to expand business at low cost and it provides opportunities for global retailers to make their brands global. Thus, the way of doing business has changed tremendously worldwide due to technological advancement. According to data statistics, 52% of the world population is internet users (Internet W. S., 2018). That gives us an indication of how e-commerce is going to influence the future of our business and social life. In 2017, the worldwide e-commerce sales amounted to 2.3 trillion USD and projected to reach 4.88 trillion USD by 2021 (eMarketer, 2018). Bangladesh itself has achieved rapid development in the adoption of broadband services within a short time period with the household broadband penetration rate of 6 percent in 2006 to 18.7 percent in 2016 surpassing the target of 50 percent penetration rate set in 2010 (MCMC, 2018). According to Internet Service Provider (ISP, 2017), the population penetration rate of the broadband subscriptions in Bangladesh is 38.1 percent. However, in Bangladesh e-commerce is still at developing phase though it started in the late 1990s (e-cab, 2016). The situation started changing in 2012-2013 when two e-commerce site akhoni and ajkerdeal introduced themselves to the online consumers. Some foreign investors like Olx, daraz, and kaymu joined the competition along with local ones (Rashed, 2017). A site named rokomari.com is selling books online like Amazon and the organization is expanding business into other product categories. Bikroy.com is providing both buying and selling options for the consumer goods in their platform. Online food delivery services also got a very positive response from food lovers. Due to high traffic congestion, consumers prefer ordering food online to visiting the restaurant. The growing popularity of online shopping and

increased number of internet users are showing great prospect of e-commerce development in Bangladesh.

E-Commerce Index 2016 shown that Bangladesh is one of the top 10 economies by the difference between the predicted and actual share of internet users buying online (UNCTAD, 2016). In November 2017, a report published by New Age (daily newspaper) mentioned that e-commerce sector is expected to grow 70% and the market size is estimated $110-115 million compared to 2016, which was $65-70 million. Though e-commerce only contributes 0.7% of the country's total retail market (newagebd, 2017). Another report shows that the current e-commerce market size is increased to $230-240 million and annual growth is 45-50% (Muhammad, 2018). On the other hand, around 50,000 people are actively engaged in e-commerce while approximately 1,000,000 people are employed in the sector (Islam, 2018). In a related finding, Hasan et al., (2016) stated that a good number of the households in Bangladesh own a computer, 36 percent of the population is connected to the internet and a good number of the active users purchase products and services online. These findings show that Bangladesh has potential growth in e-commerce and therefore it is important to understand the online shopping behavior of consumers. Though the internet usage rate is increasing rapidly, the number of online shoppers is not increasing at a similar pace. Moreover, contribution of e-commerce as a percentage of GDP of Bangladesh is less than 1% which is much lower compared to other sectors (Islam, 2018). On the other hand, there is still dearth of empirical studies related to the determinants of online shopping behavior in a developing country like Bangladesh. Only a few studies have been conducted in Bangladesh on online shopping. Emon and Rupom (2017) conducted a study to get insights from the online shoppers in Bangladesh and they found that online customers were not satisfied with the online stores. Karim and Xu (2018) conducted a study on the characteristics of Bangladesh e-commerce, its past and present development based on secondary data (Karim & Xu, 2018). They also tried to know the perception of online consumers and the challenges consumers face shopping online. So, the above discussion depicts that only a few studies have been conducted on the online shopping in Bangladesh. Moreover, the factors that might influence online shopping behavior in the context of Bangladesh are still unexplored. From that ground the present study aims at identifying the important factors influencing online shopping behavior among the Bangladeshi customers. Hence the prime objective of this study is to identify the important factors influencing online shopping behavior.

2. Literature Review

The present study is designed to explore the factors influencing online shopping behavior of the Bangladeshi customers. The present study's theoretical basis is the Theory of Planned Behavior (TPB) that is a popular theory for understanding human behavior. The TPB has been used in different contexts such as understanding consumer behavior with regards to the environment and energy conservation (Macovei, 2015). The drivers of the customer behavior can be ranging from the internal factor such as attitudes towards the behavior to the external factors such as influence from the families, friends and social media, perceived usefulness of the website and also trust to the retailers or the quality of the goods purchased from the online store. In the next section, the key factors influencing online shopping behavior will be explained in detail by referring to the previous studies.

2.1 Attitude

Attitude is a person's overall evaluation of a concept (Faizo 1986). These evaluations can be created by both affective and cognitive systems (Fishbein & Ajzen 1981). A definition by Wu and Wang (2014) stated that attitude is a psychological inclination expressed by accessing a particular entity with some degree of favor or disfavor and it is built through affective, cognitive and behavioral appraisal. Attitude is the positive or negative cognitive evaluation, emotional feeling and behavioral tendency held by customers during transaction (Lai & Wang, 2012). It influences customers' judgment and evaluation during transaction, and it would affect the perception towards

the sellers (Lai & Wang, 2012). Thus, attitudes are an outcome of psychological process that cannot be directly observable or measurable but can be inferred from what people say or what they do (Alam & Iqbal 2007). According to Fishbein (1980), attitude is the most important concepts used by marketers to understand the consumers purchase behavior. Convenient attitude is found to positively influence behavioral intention (Hidayanto et al., 2012; Hsu et al., 2013; Lai & Wang, 2012). Other studies also found that a convenient attitude significantly influences the purchase intention (Husin & Rahman, 2013; Phau et al., 2013; Wu et al., 2014). The social psychology literature on behavioral research has established attitude as an important predictor of behavior, behavioral intention, and explanatory factors of variants in individual behavior (Diallo et al., 2013; Husin & Rahman, 2013; Li, Robson & Coates, 2013; Petruzzellis, 2010; Wu et al., 2014). Therefore, the present study hypothesizes that;

Hypothesis 1: Attitude positively influences online shopping behavior.

2.2 Subjective Norm

According to Ajzen (1991), subjective norm is the perceived social pressure to perform or not to perform the behavior. Social pressure can influence one's behavior in different ways in different societies (Husin & Rahman, 2013). Subjective norm can be gauged from other people's normative expectations and motivation to comply with these expectations (Orapin, 2009). Consumers get influenced by public opinions and the expectations from specific groups (Xie et al., 2011). According to Husin and Rahman (2013), consumers' decision making is influenced by family members, friends, religious teachers and mass media such as newspapers, televisions, magazines. Consumers typically make decisions based on the influence and information gathered from reference groups such as friends, parents, and teachers. Nonetheless, the information gathered is transformed to knowledge where it influences consumers' decision process regarding their purchase behavior (Childers & Rao 1992). Previous studies (Husin & Rahman, 2013; David, Tong, Yin, 2012) also supported that subjective norms might influence human behavior. Study by Nordin and Nik (2011) demonstrated that there is a positive relationship between subjective norm and consumer behavior. Therefore, it is hypothesized that;

H2: Subjective norm positively influences online shopping behavior.

2.3 Perceived usefulness

Perceived usefulness is defined as the extent to which consumers feel the online website could add value and efficacy to them when performing online shopping (Hu et al., 2009; Lai & Wang, 2012). Perceived usefulness is also defined as the individual's point of view that using a system would increase or improve job performance (Zhu, Lee, O'Neal & Chen, 2009; Liao et al., 2013). The perceived usefulness of the website depends on the efficiency of technological characteristics such as advanced search engines and the personal service provided by service provider to consumers through the online website although there is no direct contact between them (Kim & Song, 2010). Various information and high-quality goods descriptions must be provided to the customers in order to increase the usefulness of an online store (Chen, Gillenson & Sherrell, 2002). Hernandez et al., (2011) revealed that perceived usefulness has significant effect on online shopping behavior in Spain but Aghdaie et al., (2011) suggested that perceived usefulness does not have significant effect on online purchasing behavior in Iran. Other studies conducted by Enrique et al., (2008), Kim & Song (2010) and Xie et al. (2011), found that perceived usefulness is a significant predictor of intention to purchase via internet. Several studies showed positive relationship between perceived usefulness and consumer behavior (Aghdaie et al., 2011; Hernandez et al., 2011; Ndubisi & Jantan, 2003). As most of the previous studies evidenced that perceived usefulness is an important determinant of behavior, this study hypothesizes that;

H3: Perceived usefulness of website positively influences online shopping behavior.

2.4 Trust

Trust is important in online transactions as both the buyers and sellers are mostly unknown to each other. Trust is based on the rational assessment of an individual's ability and integrity, and on feeling of concern and good intention (Roca, Garcia, & Vega, 2009). In the online environment, trust is built primarily in a person-to-website manner rather than person-to-person communication, mediated through technology (Limbu et al., 2012). According to Kim & Song (2010), trust is the most important dimension in online transactions and thus online stores should emphasize on building and maintaining trust. Lack of trust is one of the main reasons for customers not engaging in online purchase (Limbu et al., 2012). Essential condition for trust in online retailing includes reliability of the website, performance and transaction between an online seller and the buyers (Limbu et al., 2012). Rahbar and Wahid (2011), Hou and Yu (2009), found that trust positively and significantly influences actual purchase behavior of the consumers. According to Aghdaie et al., (2011), consumer trust in online transaction is more important than in traditional markets. The result is consistent with that of Kim & Song (2010) who suggested that trust might lead to actual online shopping behavior. Therefore, it is hypothesized that;

H4: Trust positively influences online shopping behavior.

2.5 Mediating Effect of Technological Knowledge

Knowledge is essential for comprehending new technology. According to Rogers (2003), knowledge occurs when potential adopters learn about the existence of an innovation and gain some understanding concerning its functionality. Sometimes researchers use the term self-efficacy to define the ability to perform a specific task. Social cognitive theory proposes that self-efficacy is the belief that one has the ability to perform a specific behavior (Compeau & Higgins, 1995). So, in terms of online shopping, the individuals must have the technological knowledge to access internet and computer technology. An individual with high expertise may have a higher intention to use a system than an individual with lower expertise. Furthermore, technological knowledge helps in building confidence and trust with the firms as it may send a signal that they have really put in thought about their end users (Wang, Wang, Lin & Tang, 2003). There are some studies supporting the influence of technological knowledge on behavioral intentions (Luarn & Lin, 2005; Wang et al., 2006). Dwivedi et al., (2007) found that perceived technological knowledge is a significant factor for explaining consumers' intention to adopt new technology. While previous studies (Luarn & Lin, 2005; Wang et al., 2006; Vasseur & Kemp, 2015) examined the direct effect of technological knowledge in relation to behavioral intention and actual behavior, the present study intends to examine the mediating effect of technological knowledge in the relationship between the determining factors and online shopping behavior. The inherent logic is that individuals might have positive attitude, reference group influences, trust and the perceived usefulness of the website of the stores, however without technological knowledge; it is not possible for them to shop online. Therefore, technological knowledge might work as mediating variable here. Under this backdrop, the present study examines the mediating effect of technological knowledge on the relationship between the determining factors (convenient attitude, subjective norm, perceived usefulness and trust) and online shopping behavior and the following hypotheses have been proposed;

H5: Technological knowledge positively influences online shopping behavior.
H6: Technological knowledge mediates the relationship between attitude and online shopping behavior.
H7: Technological knowledge mediates the relationship between subjective norm and online shopping behavior.
H8: Technological knowledge mediates the relationship between perceived usefulness and online shopping behavior.
H9: Technological knowledge mediates the relationship between trust and online shopping behavior.

3. Research methodology

In the previous chapter, literature review has demonstrated various studies related to online shopping. The variables that have been identified for investigation are; convenient attitude, subjective norm, perceived usefulness and trust in relation to online shopping behavior. Theory of Planned Behavior (TPB) is used as the theoretical basis of this study since it is widely used by the researchers to interpret and explain the user's behavioral action (Zhou, Dai, & Zhang, 2007). Out of the five study variables, two have been chosen from TPB without any change (attitude and subjective norm), perceived usefulness is from Technology Acceptance Model which is proved to be important in online shopping (Aref & Okasha, 2019) and trust is newly proposed determinant of OSB. The present study also examines the mediating effect of technological knowledge in the relationship between the determining factors (convenient attitude, subjective norm, perceived usefulness and trust) and online shopping behavior. This technological knowledge is similar to the self-efficacy construct of TPB. This research employs quantitative approach to investigate the online shopping behavior performed by the consumers in Bangladesh since the quantitative survey is very useful to investigate the social phenomenon either using statistical, mathematical or computational techniques (Laura & Leahey, 2008). Data were collected by distributing questionnaires on the importance of convenience attitude, subjective norm, perceived usefulness of website, technological knowledge and trust that influenced consumers' decision to purchase online. All the responses on the study variables were gathered on five-point Likert scale. The items were adapted from the previous researches (Aref & Okasha, 2019; Yi et al., 2016) because they were proved to be reliable and valid in previous studies. 650 sets of questionnaires were distributed among the students aged between 18 to 34 years in five universities in Bangladesh based on convenience sampling. University students have been chosen as the samples of the study since they are familiar with new technology. Moreover, questionnaire was given to only those students who had previous online shopping experiences. Each questionnaire was accompanied with a cover letter stating the purpose of the study, confidentially of the questionnaires and instructions on how to answer the questionnaire. The researcher administered the questionnaires and distributed in the classes. 30 minutes were given to answer the questionnaires. Prior to the distribution, the researcher approached the lecturers for permission to distribute the questionnaires to the students. 390 sets of filled in questionnaire were collected back in usable form giving a response rate of 60%. The collected data were analyzed by Partial Least Squares Structural Equation Modeling (PLS-SEM) method with the support of smart **pls software version 2.0M3.**

4. Data Analysis Findings

In Partial Least Square Structural Equation Modeling (PLS-SEM) analysis, in the first step, the data reliability and validity are established by the PLS measurement model that provides the Cronbcah alpha values, items loading, cross loadings, AVE and path coefficient as well as the coefficient of determination. The PLS SEM measurement model findings are shown in table 4.1.

4.1 Reliability

The first step is to assess the reliability and validity of the constructs in the measurement model (outer model). Reliability refers to the internal consistency of data (Hair et al., 2014). Cronbach's alpha and Composite reliability values are used to assess reliability of constructs. For reliability, all constructs should have Cronbach alpha values above the threshold of 0.70 (Hair et al. 2012) and the composite reliability values of the all constructs should be greater than the threshold of 0.70 (Bagozzi& Yi, 1988).

Table: 4.1: PLS SEM measurement model output

Variable	Items	Loadings	Cronbach alpha	Composite Reliability	Average Variance Extracted (AVE)
Subjective Norm (S)	S1	0.760	0.827	0.873	0.536
	S2	0.734			
	S3	0.738			
	S4	0.731			
	S5	0.649			
	S6	0.775			
Perceived Usefulness (PU)	PU1	0.825	0.735	0.833	0.558
	PU2	0.699			
	PU3	0.642			
	PU4	0.807			
Attitude (A)	A1	0.780	0.786	0.852	0.538
	A2	0.801			
	A3	0.673			
	A4	0.645			
	A5	0.755			
Trust (T)	TR1	0.781	0.750	0.822	0.606
	TR2	0.763			
	TR3	0.792			
Technological Knowledge	TK1	0.711	0.788	0.844	0.598
	TK2	0.691			
	TK3	0.603			
	TK4	0.713			
Online Shopping Behavior (OSB)	OSB 1	0.732	0.825	0.869	0.540
	OSB2	0.616			
	OSB3	0.757			
	OSB4	0.791			
	OSB5	0.601			
	OSB6	0.707			
	OSB7	0.671			

As shown in table 4.1, all the Cronbach alpha and composite reliability values are above 0.70 which indicates good internal consistency of data (Hair et al.,2012) and the reliability of all constructs is established in this study.

4.2 Convergent Validity

As shown in table 4.1, all the values of AVEs are above 0.50 which confirms the convergent validity of constructs. The absolute standardized outer loadings of items are above 0.50. Chin (1998) believes that loadings over 0.5 still be acceptable if there exist other indicators in the block for comparison. It is clear from table 4.1 that all the item loadings are greater than 0.50 which establishes convergent validity at indicator level. Therefore, 0.50 and above AVE values of all the constructs and 0.50 and above values of item loading confirm the convergent validity of constructs in this study.

4.3 Discriminant Validity

The square root of the AVE of each construct was compared with the correlation between that construct and the other constructs. As shown in table 4.2, the square root of the AVEs exceeds the highest correlation between that construct and the other constructs, providing another support of discriminant validity (Chin 1998; Fornell & Larcker, 1981) of the constructs in this study.

Table 4.2: Correlations of Constructs and Discriminant Validity Assessment

		U			K	SB
	.816					
U	.581	.810				
	.622	.608	.850			
	.535	.693	.680	.779		
K	.495	.635	.705	.589	.849	
SB	.556	.601	.621	.588	.630	.845

*Square root of the AVE on the diagonal.

4.4 Coefficient of Determination (R^2)

The coefficient of determination (R^2) value indicates how much the independent variables can influence the dependent variable. In this study, the R^2 value is 0.527 which indicates that the dependent variable is influenced by the independent variables by 52.70%. So, the five independent variables namely, convenience attitude, trust, subjective norm, perceived usefulness and technological knowledge considered in this study can explain the online shopping behavior by 52.7%.

4.5 Structural Model Assessment for Hypotheses Testing

Having assessed the measurement model for reliability and validity, the next step is the hypotheses testing through the findings of the structural model. The hypotheses testing findings generated from the PLS structural model are documented in table 4.3. A hypothesis can be accepted if it is significant at 5% ($p<0.05$) level or if the t statistics is higher than 1.96 (Hair et al., 2014).

Table 4.3: Structural Model output for hypotheses testing

Hypothesis	Path Coefficient	Standard Error	T-Value	P-Value
A->OSB(H1)	0.339	0.106	3.889	0.000
SN ->OSB(H2)	0.201	0.061	3.032	0.000
PU->OSB (H3)	0.145	0.084	1.991	0.046
T ->OSB(H4)	0.239	0.386	3.574	0.000
TK ->OSB(H5)	0.198	0.321	2.49	0.022

Hypothesis 1 which posits that attitude is positively and significantly correlated with online shopping behavior. The table 4.3 shows the path coefficient of this variable is 0.339 and it is significant at 1 % level ($p<0.01$). Thus, there exists a positive relationship between attitude and online shopping behavior. So, Hypothesis 1 is supported. It is seen from the table 4.3 above that the path coefficient of subjective norm with online shopping behavior is positive with a value of 0.201 and it is significant at 1% level ($p<0.01$). Since, subjective norm is found to be strongly and positively correlated with online shopping behavior, hypothesis 2 is supported. Hypothesis 3 states that perceived usefulness is positively and significantly related to online shopping behavior. Based on the path coefficient value in Table 4.3, it is clear that perceived usefulness positively and significantly influences the online shopping behavior ($P<0.05$) which supports hypothesis 3. Again, table 4.3

shows that the path coefficient value for trust is 0.239 which is significant at 1% level. This result shows that there is positive relationship between trust and online shopping behavior. Thus hypothesis 4 is supported. Finally, the hypothesis test findings reveal that technological knowledge is positively and significantly associated (path coefficient, 0.198; p<0.05) with online shopping behavior. Hence hypothesis 5 is supported.

4.6 Mediation analysis

Mediation is the process in which a variable or variables influence other variables through intervening or mediating variables (Preacher & Hayes, 2004). The Sobel test and bootstrapping are both recommended approaches for determining the strength and significance of the mediation (Preacher & Hayes, 2004). In this study, the mediation effect was examined using the Sobel test. The Sobel test uses the path coefficient and standard error of the two paths: Independent variable →Mediator and Mediator → Dependent Variable (Hair et al., 2014). There is mediation if the indirect effect is significant at 5% level (Hair et al., 2014). The present study was designed to test the mediating effect of technological knowledge in the relation between the determining factors (convenient attitude, subjective norm, perceived usefulness and trust) and online shopping behavior. Table 4.4 shows the findings of mediating effect test. Table 4.4 shows that the direct effect of attitude on online shopping behavior is 0.339 while the indirect effect is 0.204. On the other hand, the indirect effect is significant at 5% level (P, 0.020; t, 2.879). Therefore, technological knowledge mediates the relationship between attitude and online shopping behavior. It is a partial mediation because attitude significantly influences online shopping behavior. So, hypothesis 6 is supported.

Table 4.4: Mediating effect test findings

Hypothesized path	Direct relationship	Indirect relationship	T value	P value	Mediation
A->TK->OSB	0.339	0.204	2.879	0.020	Partial mediation
SN ->TK->OSB	0.201	0.182	1.472	0.150	No mediation
PU->TK->OSB	0.145	0.141	2.003	0.048	Partial mediation
T ->TK->OSB	0.239	0.199	1.398	0.141	No mediation

Again, the direct effect of subjective norm on online shopping behavior is 0.201 while the indirect effect is 0.182. Here the indirect effect is not significant at 5% level (P, 0.150; t, 1.472). Therefore, hypothesis 5 is not supported and technical knowledge doesn't have any mediating effect on the relationship between subjective norm and online shopping behavior. The direct effect of perceived usefulness on online shopping behavior is 0.145 while the indirect effect is 0.141. Here the indirect effect is significant at 5% level (P, 0.048; t, 2.003). Therefore, hypothesis 6 is supported and technical knowledge has mediating effect on the relationship between perceived usefulness and online shopping behavior. It is a partial mediation because perceived usefulness significantly influences online shopping behavior. There is no mediation effect of technical knowledge on the relationship between trust and online shopping behavior because the indirect effect is not significant at 5 % level. Hence hypothesis 7 is not supported.

5. Discussion

The present study was designed to examine the influence of convenience attitude, subjective norm, perceived usefulness and trust on online shopping behavior among the university students. The data analysis findings revealed that convenience attitude was the most significant followed by trust, subjective norm, technological knowledge and perceived usefulness in influencing online shopping behavior. Therefore, online platform should concentrate on those issues properly so that they can penetrate the market soon. Convenience attitude is a vital factor for choosing online shopping platform. The present study's findings also supported that convenience attitude is an essential determinant of online shopping behavior. This finding is consistent with those of Diallo et

al., (2013), Husin & Rahman, (2013), Li, Robson & Coates, (2013) who also found in their studies that attitude is a significant predictor of human behavior. Hence, online stores should focus more on developing positive attitude toward online shopping. To develop positive attitude, online retailers should focus on all indicators in the attitude construct simultaneously by stressing that purchasing online is better than traditional store. The present study also revealed that subjective norm is a significant factor influencing online shopping behavior and this finding is similar with those of Husin & Rahman, (2013), David, Tong, Yin, (2012). Hence the reference group can play a significant role in influencing online shopping behavior. Perceived usefulness of the website is an important issue for the online shoppers and the present study's findings also supported this. Previous studies (Hernandez et al., 2011; Ndubisi & Jantan, 2003) also supported that perceived usefulness is an important predictor of online shopping behavior. It is because of the fact that consumers always expect easy and fast access to the website for getting information about the products and making transactions. Therefore, online stores should provide various information and high-quality goods descriptions in the website so that customers can easily choose products and make payment. Trust was found to be significant factor influencing online shopping behavior.

The result is consistent with that of Kim & Song (2010) who suggested that trust might lead to actual online shopping behavior. Thus, building trust is an important issue for the online stores. Technological knowledge was also found to be significant determinant of the online shopping behavior. Therefore, this study's findings support Dwivedi et al., (2007) who also found that perceived technological knowledge is a significant factor for explaining consumers' intention to adopt new technology. Again, the mediating effect test findings indicate that technological knowledge mediates the relationship between attitude and online shopping behavior; and the relationship between perceived usefulness and online shopping behavior. Hence technological knowledge is essential for making online purchase. It is because of the fact that people might want to shop online; however, they cannot shop online if they don't have the technical knowledge to operate the technology. With technical knowledge, consumers are more connected, their expectations become high and more sophisticated tools are being used for getting the needs satisfied (Jose, 2017). Thus, technological knowledge is a vital issue for availing the benefits of online shopping.

6. Implications and Conclusions

The findings of this study bear deep significance both in theoretical and practical aspects. The most significant theoretical contribution of this research is the modification of the Theory of Planned Behavior Model (TPB). The current research examined that the new theoretical model consisted of Convenience attitude, subjective norm, perceived usefulness of website, technical knowledge and trust explained online shopping behavior quite well. The modified TPB is not new to marketing researchers however the findings provided different perspective especially in the comprehensive online shopping context among the university students in Bangladesh. This model was examined through a robust methodological procedure by using Partial Least Square Structural Equation Modeling (PLS-SEM) and validated across online shopping context. The findings generated from using PLS SEM technique revealed possible drivers of online shopping in the emerging business environment. The present study's findings suggested that online shopping behavior can be driven by convenience attitude, subjective norm, perceived usefulness of website, trust and technical knowledge. Thus, this study provided a robust understanding of online shopping behavior in a developing nation perspective which has extended the existing body of knowledge in the field of online shopping behavior.

From a practical perspective, there are several important implications which can be derived from the findings of this research. Through the findings of this study managers can know the consumers' insights regarding online shopping behavior from the specific culture of a developing country. This knowledge will help them design effective strategies for expanding their business in developing economies. The findings of this study suggest that online stores should focus on

convenience attitude since this variable was found to be important for the customers while shopping online. To develop positive attitude, online retailers should focus on all indicators in the attitude construct simultaneously by stressing that purchase online is better than traditional store. In order to satisfy consumers and stimulate actual online purchases, online retailers should provide impressive experience in online shopping. Delivering a high quality and favorable products and services throughout the online shopping experience might be important as competitive positioning strategies for online stores are essential. This provides immediate insight for online retailers that convenience attitude is an important step in the development of online shopping behavior. In order to maintain good perception toward online shopping, online retailers should provide variety of products choice, tailored services, easy product comparison and convenient payment process, on time delivery, prompt reply to customers' complaint and 24 hours operation.

Online retailers should focus on developing positive attitude for both the new and existing customers, enhancing positive word-of-mouth towards the brand, store reputation, products and services provided, so that they can share with their family members, friends and also promote the products on internet. At the same time, online retailers should provide secure and safe online platform to develop confidence among online shoppers. Online stores should build trust among customers so that they buy more and do positive word of mouth. Online stores should also concentrate on the usefulness of their website. Some customers complained that the products images are not always clear and sometimes mismatch with what is in web and the actual products. So, they should focus on investing more on quality image. Moreover, the statistical findings revealed that fast and clear website is an essential predictor of online shopping behavior. Finally, through this study it is now clear that technologically capable customers favor online shopping. Both the direct and mediating effect test findings reveal that technical knowledge is important for making online purchase. So online stores should think how they can make their existing and potential customers more technology friendly for increasing their sales. Though the study bears deep significance in different aspects, it has some shortcomings. The respondents were only the students while people working or in business might also buy products online. Hence the narrower sample segment limits the generalizability of the findings. Future researches may also be conducted taking samples from wide variety of people not only the students.

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Prospects of developing cross-border tourism for sustainable development of the regions-creating road maps between India and Bangladesh

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Keywords
Cross-border tourism, Archeological artifacts, Road Map, Image creation, Joint tourism management

Abstract
Before partition in 1947, eastern part of India and East Pakistan used to share similar historical connotations, archeological wonders, ecological and geographical specialties and socio-economic-cultural attributes. After emerging of Bangladesh as a country, even in present days the tourism exhibits of eastern India and Bangladesh are containing almost identical frame of resemblance. The natural world heritage site of Sunderbans as declared by UNESCO with its unique eco-system and significant tourism potentialities is being divided between two countries. Ancient archeological monuments, artifacts, Buddhist monasteries and universities with common history are spread in both the countries with their unique features and identification. Cultural attributes and rural lives of the people of both the countries are alike.

At present, both the countries are trying to project these tourism and cultural attributes to be presented before international tourists and to find a place in world tourism destination map. Despite these earnest individual efforts, international tourist footfalls, tourist spending and revenue generation from tourism is not significantly enjoyed by any of these countries. As Indo-Bangladesh relations has reached a new height under the leadership of two visionary leaders and both the countries' economy are rising- it is the need of the hour for both the countries to make concerted efforts to create a road map to project common tourism destinations and tourism attributes before international tourism arena on the base of a common platform. Joint tourism management policy to be framed at governmental level of both the countries which are to be initiated and implemented by tour operators, NGOs, local bodies and other stake holders.

Common capacity building of tourism infrastructure, sharing of tourism information and revenue, joint initiatives of image creation, eco-certification and positioning of tourism destinations, joint global marketing of tourism products may be some of the important ingredients of the projected road map to be created through cross-border tourism between two countries. This unique effort may create new dimension of relationship between two countries.

Considerations for archaeological tourism development to boost socio-economic upliftment: Analysis on Mahasthangarh, Bangladesh

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Keywords
4A Development, Attraction Management, Local Economy, Community Tourism, Sustainable Development, Archaeological Commodities.

Abstract
Archaeological tourism is a prospective tourism form to exalt the country branding. The objective of this study is to underline the 4A development to advance Mahasthangarh as an exceptional tourism destination in Bangladesh. The authors have used focus group discussion and observation method among the stakeholders to find out the eventual results. A longitudinal study among the local community people has been conducted to find out how community archaeology can develop local economy. Disability access, funding mechanisms, signage and language, new technology and social media, marketing and merchandise, coordinated tourism strategies, environmental impact assessment, logistics for visitors, scope for vernacular arts and crafts possibly in the form of merchandise sold to the tourists, strategies to mitigate the harmful effects by increased footfall of tourists are included in a brief. Sustainable 4A development can lead the destination to reach a new height as well as can support the concerned authorities to ensure adequate facilities and flexible accessibility to open the door of archaeological tourism at Mahasthangarh which can turn the rural economy of this area into an emblematic example.

1. Introduction

Tourism is one of the many external forces influencing the direction and options for local development (Gildea, Sligo, & Hanrahan, 2009). The role of tourism is important in the context of local economic development (Pedrana, 2013). The most established archaeological site "Mahasthan" implies an extraordinary place situated at a separation of 18 km. north of Bogra town, Bangladesh. Mahasthangarh is the most seasoned archaeological site of Bangladesh which is settled on the bank of the Karatoa. Mahasthangarh which speaks to a great past of around two thousand and five hundred years of Pundranagar, the capital city of old Pundra Vardhan Bhukti. The fortress, the strengthened heart of the old city, is rectangular in design, estimating about 1.523 kilometers (0.946 mi) long from north to south, and 1.371 kilometers (0.852 mi) from east to west, with high and wide defenses in the entirety of its wings. Region of the bastion is around 185 ha. The Karatoya, once a relentless waterway however now a little stream, streams on its east. Till the 1920s, when unearthing began, within the fortification was higher than the encompassing zones by more than 4 meters and was dabbed with a few straggling raised parcels. The defense resembled a wilderness clad mud bulwark with constrained openings at a few focuses. The defense was 11–13 meters (36–43 ft) higher than the encompassing territory. At its south-east corner stood a mazhar (heavenly tomb). A later day mosque (worked in 1718–19) was likewise there.

Unfortunately, this incredible tourism resource of archaeological, religious and historical values could not draw the attention of adequate number of tourists to upgrade the tourism industry

and local economy. However, an approach to archaeological resources management consistent with national realities includes involvement of communities, groups, assuring professionals in the field, and finally reinforcing the institution charged with administering cultural resources by updating personnel and orienting them toward education at all levels, and by taking care that site exploitation be truly sustainable.

Hence, a proper understanding is required to unveil the issues that impede the tourism development over there. The extant tourism related studies in this context in most of the cases highlighted the potential of the destination to develop different forms of tourism such as community-based tourism. However, very little has been documented addressing the barriers of tourism development in this context. Considering this phenomenon, the current study aims to develop an in-depth understating of the barriers relevant to the tourism development, Bangladesh. This study follows a qualitative case study approach.

2. Literature Review

Archeological tourism is a type of social tourism, which plans to advance open enthusiasm for prehistoric studies and the preservation of recorded locales (Hasan & Jobaid, 2014). Archaeological tourism can incorporate all items related with open archaeological advancement, including visits to archeological destinations, exhibition halls, elucidation focuses, reenactments of recorded events, and the rediscovery of indigenous items, celebrations, or theaters (Mazzola, 2015).

Archaeological tourism is a kind of cultural tourism and a very complex segment of the 'tourism industry,' its supply is diverse and versatile. The future positions of the discipline will probably be strengthened both directly and indirectly as with the change of the recreational needs the aim to get acquainted with the cultural values is strongly increasing (Csapo, 2012).

Archaeological locales require another administration and improvement structure to address the weights coming about because of an expanding enthusiasm for archeological tourism. The role of archaeological tourism in social and economic development is remarkable (Ullah, 2014). With the development of world tourism, Bangladesh is turning into another goal on the planet vacationer outline. As per UNWTO, the best 15 goals ingested 98 percent of all universal traveler entries in 1950. In 1970 the extent was 75 percent, which fell further to 57 percent in 2007. Moreover, the tourism sector in Bangladesh has been progressively mounting from mid-nineties to till now (Dabour, 2003). It has a great scope to develop tourism sector by applying new policies and strategies (Karim, 2014). Archaeological tourism in Bangladesh, as a section of the bigger tourism industry, can be the significant supporter of aggregate tourism profit. Remote visitors coming to Bangladesh see archeological and verifiable places to start with, while their second decision is beautiful excellence. In spite of the fact that supportability of legacy tourism has turned into a noteworthy worry from the points of view of both scholastics and professionals, the lion's share of research and studies have tended to comprehend the social and instructive issues of legacy tourism as opposed to concentrating on the utilization of manageability in a functional setting (Schmutz & Elliott, 2016). The cultural materials, unique elements and verifiable data demonstrate that Mahasthangarh saw more than 1000 years human exercises as focal place with political, efficient and religious capacities in a long-haul point of view (MD. RIFAT-UR-RAHMAN, 2014).

Despite of having great potentials of Mahasthangarh, there is no research work to make it a distinct tourist destination. The author did not find any research which can propose and clarify a framework for sustainable management through 4Adevelopment of Mahasthangarh to contribute for the local economy. So, the authors have selected this site as a significant resource to safeguard community people by giving opportunities to earn by selling archaeological commodities.

3. Profiling the Study Setting

'Mahasthan' means a place that has sanctity and 'garh' means fort. So, Mahasthangarh was named for its hallowed fort. Mahasthan was first mentioned in a Sanskrit text of the 13th century entitled 'Vallalcharita'. It was stated in another book 'Korotoa Mahatta', circumstantially written in

12th–13th century. The same manuscript also mentions two names of the same place – Pundrakhetra, land of the Pundras, and Pundranagar, city of the Pundras. In 1685, an administrative decree described the place as Mahasthangarh. This earliest and largest city, fortified by mud and red bricks, measures 1,525 metres long to north-south, 1,370 metres to east-west and 5 meters high from the soil. Hashanah is in the Mahathat village in Shibganj upazilla, 13 kilo metres north to Bogra town. In the primeval period, civilisation was established based on a river so that the water way could make communication easier along with road communication. Mahasthan was situated on the western bank of river Korotoa. Another significant feature that was considered as a precondition for such establishment was its security system. To ensure security preparations, building fort was necessary then (Daily Sun, 2017).

With a unique combination of vast landscape, archaeology, architecture and history, Mahasthangarh was declared as the cultural capital of the South Asian Association of Regional Cooperation (SAARC) on November 24, 2016, by a SAARC Cultural Centre team, led by its director Wasantha Kotuwella from Sri Lanka (The Daily Prothom Alo, 2016). From the archaeological indication, it is proven that Mahasthangarh was the capital of the Mauryans, the Guptas, the Buddhist Palas, the Hindu Sen dynasties kings and Muslim leaders in the later period. Primarily it was found as Varendra-bhumi or Barind tract, which encompasses the northern districts of East Bengal.

As a Bhukti or administrative province of the Gupta Empire and later Kingdoms, Pundra Vardhana was a greater territory, containing a large segment of even southern West Bengal. Beyond the citadel, other ancient remains were found within a radius of 7-8 kilo metres in a semi-circle in the north, south and west, which testify the existence of extensive suburbs. It is worth quoted that Xuanzang, the famous Chinese pilgrim visited Pundra Vardhana (pan-na-faan-na) in between 639-645 AD. Eminent British historian and archaeologist Alexander Cunningham rightly identified the present Mahasthangarh as Pundranagar following the description of Xuanzang (Current- Affairs, 2017).

The first archaeological excavation was carried in the area in 1928-29 under the supervision of the then leading archaeologist Kashinath Narayan Dikshit. The excavated mounds were Bairagir Bhita, Munir Ghon and Govinda Bhita. An excavation in 1934-36 by Nani Gopal Majumdar exposed a gigantic shrine or stupa plinth built in the terraced cellular style of construction. After a long gap the excavation was resumed in 1960-61 to continue till 1988. It got a new momentum with the joint venture of Bangladeshi and French archaeologists in 1993.

In the first phase, the operation was concentrated in the middle of the eastern rampart area. Then in the second phase the excavation sustained around the mazar area till 2000. These expeditions have revealed a long cultural sequence raging from 4th century B.C. to 15th century A.D. Mud and brick-built houses, roads, drains, wells, temples, mosques, gate ways, bastions of preMauryan, Mauryan, Gupta, Buddhist Pala, Hindu Sen dynasties and the Muslim period have been successfully unearthed in 18 building levels (Wikipedia).

4. Methodology

The study is qualitative in nature. Focus group discussion and observation method has been adopted to find out the ins and outs. The respondents for focus group discussion were 15 employees of the department of archaeology, People's Republic of Bangladesh, 50 local representatives and 15 experts of archaeological attraction preservation and management. The study has been conducted in last January to March 2018.

Convenience sampling was used to select the tourist participants and the local people, and judgmental sampling was used to select the tour operators and institutional representatives. The researchers decided to stop interviewing when they observed data saturation.

This study has adopted the six-stage thematic analysis process for the qualitative data suggested by Braun and Clark (2006). These stages are getting familiar with the data (transcribing

and repeatedly reading the data), generating initial codes, and collating codes into potential themes, reviewing the themes, refining the themes, and producing the final report. Interviews were transcribed first and then translated to the English. In translating the data, the authors ensured accuracy by cross-checking the translated files three times altogether. Thereafter, the researchers read the interview transcripts a few times to get a thorough understanding of the whole data set. Later, the interview transcripts were coded manually and categorized under the potential themes, which were refined and defined correspondingly to finalize for final reporting.

5. Limitations to the study as well as scope for future research

The study has been conducted by self-funding and within a very short timeframe. The tourist and local participants were selected through convenience sampling. Unless all the stakeholders come together to boost the destination, the study will be limited only in papers. On the contrary, the study paves the way for future research in terms of conservation, marketing, inclusive destination branding and many more.

6. Findings and Discussions
6.1 Attractions

1. Attractions- hotel, watch tower, park, shopping area/local market: For this A the authority can establish an economy hotel which will be eco-friendly building conforming to international standards. "This will be a real green building as each, and every area of the building has been designed such that it will ensure an efficient use of water and energy". Target Market will be mainly Domestic tourists and a few outbound tourists. It will be an economy hotel with some additional facilities for tourist's betterment.

Table 1. Key themes and issues summarizing the study findings

Base theme	Sub-themes	Emergent issues
Tourism development challenges/barriers	Infrastructure	Transport problem Accommodation problem Poor restroom facilities Poor refreshment facilities
	Planning and management	Lack of planning Poor management No idea about carrying capacity Budget constraint No authority to control transport facilities Lack of promotional activities Lack of coordination
	Awareness of local people	Illiteracy Lack of tourism knowledge

1.1 Structural Development: USGBC is a membership based non-profit organization that promotes sustainability in how buildings are designed, built and operated. So far, 49 projects from Bangladesh have been registered with USGBC. The authority can pursue the first LEED (leadership in energy and environmental design) platinum certification for a commercial green building in Bangladesh. They can also register our plan with the US Green Building Council (USGBC).

1.2 Watch Tower: There can be a watch tower for tourists. So that tourists can have a look on the beauties and the sustainability of this heritage site can be maintained. Tourists will not need to climb on the attraction.

1.3 Archaeological Park: An Archaeological Park is a prospective tool for Local Sustainable Development. The authority can establish an archaeological park to enhance and preserve the beauties of this site. Research facilities are to be there to encourage young generation to contribute for the tourism sector. The authority will encourage locals to make replicas to enhance the beauty of

this park which will embellish the park as a green area. Different archaeological attractions and signs will be shown there.

1.4 Local Market/Shopping Area development: The authority can establish or renovate the existing market. The authority can establish two types of market with different products. The first market is the market of crafts. The main product of the market is various handicrafts which will focus mainly on the age-old tradition. The authority can sell traditional jamdani sharees, nokshi katha, bamboo made utensils, various silver made ornaments, and soil made utensils in the market. Tourists may buy these as souvenirs which are mainly to remind them about their journey and visiting experience. Here, the authority can engage the local people with this business to earn and maintain their livelihood by selling those items. On the other hand, the authority will set a market which will mainly sell traditional food of Bangladesh. In Bangladesh there are different cuisines in different places. That tourists can enjoy different local cuisines at the same place. In this case, local community can be engaged as well. In case of merchandising the local made products, local government has a great role to play by arranging fairs and exhibitions at different times.

6.2 Accessibility

Internal and External Transport: There are many ways to go to Bogura such as bus, train everything is available. But problem is in internal transport to visit Mahasthangarh, Hazrat Shah Sultan Majar, Gobinda Vhita, museum and others. The roads are to be constructed as spacious and smooth enough to drive the transports. The front desk of the proposed economy hotel will also deal and provide with internal environment friendly transports like: Auto Rickshaws, Rickshaws, Easy Bikes and so on. Disability access must be ensured to establish this place as an international tourist spot.

6.3 Amenities

Accommodation, Food and Beverage, Entertainment, Tour Guide: The logistics for visitors travelling from Dhaka and other population centres are to be provided to retain tourists for longer level. The proposed economy hotel will be able to serve the tourists of all income levels. Food and Beverages will be served in a hygienic manner. Some of local food, recognized curd will be served specially. All the Bengali food will be cooked. Some foreign menus will also be served there. Entertainment can be provided by arranging cultural events by local performers. Locals can arrange cultural programs, dance or music shows. Thus, they can also be benefitted financially. The local culture will get a chance to revive.

6.4 Ancillary Services

Guides, local Organizations, clubs, welfare associations: The authority can launch Zero archaeological damage program through establishing a club of youth. The authority can have reward program for local organizations who will try at their level best for preservation of this site. The hotel authority will also provide tour guide to help people to learn the history to spread positive word of mouth and bring more tourists by achieving the tourist's lifetime equity.

7. Sustainable development initiatives

Environmental Impact Assessment and carrying capacity analysis are prerequisites to ensure sustainable tourism development. Both funding and operational mechanisms should be decided through PPP (Public Private Partnership). New technology such as database management system could be applied to count the tourist flow and to restrict the number of tourists visiting this destination in a day. There is also scope for vernacular arts and crafts possibly in the form of merchandise sold to the tourists by the local people. Social media and positive word of mouth could be great marketing tools. A site of this significance requires constant upkeep and increased footfall by tourists might cause harm to the site, and thus it is important to adopt coordinated tourism strategies there are to mitigate such activity

8. Conclusion

In recent times, tourists want variety of tangible and intangible services while visiting a tourist spot. Although this notable archaeological site would have some limitations to fulfill the demands of modern tourists in the upcoming days. Whereas, there is a lack of necessary amenities and proper representation of heritage, archeological and other resources is not prevalent. For analyzing future perspectives of archaeological sites that could be confronted in the region, it is imperative to mention some issues like gradual moldering of the real shapes of the relics, threat of alternative tourism products, insufficient tourism services and absence of trained tour guide as well as lower carrying capacity. This research has been conducted to resolve the future and present tourist demand and 4A development according to the needs of tourists of all categories. Local people can play the most vital role to minimize the limitations to meet future challenges. The 4As "Attraction, Accessibility, Amenities, Ancillary Services" deployment are collectively applicable to the Mahasthangarh and overall tourism sector of Bangladesh while there should be a prioritized applicability of accessibility to draw the attention of numerous tourists. The mode of transport which ensures accessibility to Mahasthangarh itself can be a tourism attraction to add extra value in case of visiting this remarkable destination. Moreover, adequate number of activities and traditional or nontraditional recreational facilities can boost tourism to a greater extent. However, through proper planning and implications the authority might go a long way to attract tourists to this archaeological attraction by the development of 4A appropriately.

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Splendid tourism: A new dimension of tourism in Bangladesh

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Keywords
Destinations, International Tourist, International Icon, Splendid tourism

Abstract
　　Tourism marketing strategies can divert the demand of tourism towards new destinations and new forms of tourism. The development of new forms of tourism can arise due to people's demands, choices, destinations resources and promotion. These factors attract the future segment of tourists and increase the number of tourist arrival. "Dark tourism" is a currently recognized term whereas splendid tourism is an identical novel idea. In "Dark tourism" the monuments are the symbols of some tragic history of the nation. Splendid tourism is a special interest tourism which is related with a destination's glorious history, indestructible struggle and magnificent memorials. The history represents the transformation of a nation's pain into happiness, grief into inspiration and struggle into celebration. The main purpose of the paper is to elucidate the concept of splendid tourism as well as increase the awareness and to highlight tourism destinations by linking the form of splendid tourism with the history of International Mother Language Day and Liberation war of Bangladesh. It also emphasizes to increase the international tourists in Bangladesh for the contribution in tourism industry. In this paper, the significance of the unique concept of splendid tourism has been underlined and some recommendations have been provided for further studies by focusing the splendid tourism destinations as the most tourist potential sites in Bangladesh.

Ready-made garments inclusion: A study on science and technology park of Extremadura, Spain

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Keywords

Abstract

The ready-made garments (RMG) can have a noteworthy contribution to the economy of a country when it possesses a noticeable application of technology and innovation in its design attractiveness, healthier aspects of body and environment. The primary purpose of this study is to show the relevance of including RMG sector in Science and Technology Park of Extremadura (PCTEx), Spain in Badajoz zone. Based on the study result, it is proposed to include this promising sector in this area that has impact. The conclusion finds that the PCTEx can include the sector in this area that can ensure greater impact in social and financial gain of the economy. The study follows case study method and the results produced based on face to face interview using unstructured open-ended questionnaire. The findings support that if this industry tends to run and is supervised by the PCTEx authority in Badajoz, with the influence of this non-government association, it will flourish with its superior performance and in turn will contribute to the development of the region by creating employment opportunity for a number of unemployed people especially for women and to the country economy as a whole. The availability of low-cost human resources especially high-tech equipment and industry-friendly environment all work behind the motivation of the inclusion of this industry in Badajoz, Spain.

1. Introduction

The textile and clothing industries are necessary in economic and social terms, in short-run by providing incomes, jobs, particularly for ladies and in the long-run by providing countries the opportunity for sustained economic development (Keane and Te Velde, 2008). In 2002, textile and apparel manufacturing accounted for €380 billion in global exports, representing 6% of world trade where 8% of in world manufactured goods.

Ready-made garments are factory-made finished textile merchandise of the vesture trade. They are not custom tailored according to measurements rather generalized according to anthropometric studies. They are made from many different fabrics and yarns. Their characteristics rely on the fibers utilized in their manufacture. The first RMG factory was established in New York in 1831. During the American Civil War, the need for ready-made uniforms helped the garment sector grow in the United States. Near the end of the nineteenth century, there were changes in societal views towards RMG. Near the end of the nineteenth century, there were changes in societal views towards RMG. They were no longer seen as only for the lower classes but also for the middle classes. In the late 1860s, 25% of Garments produced in the US was ready made but by 1890 the portion had risen to 60%. By 1951, 90% of clothes oversubscribed within United States were ready made. During the same time, two-thirds of garments sold in France were ready made (Wikipedia Contributors, 2014).

In the early years of the 21st century, the largest importing and exporting countries were developed countries including the European Union (EU), the United States, Canada and Japan. The

Multi Fibre Arrangement (MFA) ruled the globe in exchange of textiles and clothes from 1974 through 2004, imposing quotas on the developing countries in export to developed countries that expired on 1 January 2005. At the General Agreement on Tariffs and Trade (GATT) Uruguay Round, it was decided to bring the textile trade under the jurisdiction of the World Trade Organization (WTO) which is beneficiary arrangement for European and other developed countries to expand this sector (Wikipedia Contributors, 2005).

Many researchers have worked on the RMG sectors and its impacts on national economy (Jahan, Zaman and Kamal, 2013). While China has started losing their attractiveness in, several Chief Purchasing Officers of United States of America (USA) and Europe moved and scrutinized their sourcing decision toward Bangladeshi RMG sector which has achieved a substantial development in this sector for this country (Berg et al., 2011). Bangladesh experienced its worst ever industrial disaster on 24 April 2013, when the Rana Plaza building collapsed, leading to over 1,100 fatalities. After that devastating disaster, several commitments have been made for improved factory standards. However, while systemic reform is taking place in Bangladesh, the improvements are from a low base and significant challenges remain, including funding of factory remediation, labor standards, poor infrastructure and various challenges to the sustainability of doing business in Bangladesh (Carlsson-Sweeny, 2014). The freeing of trade in textiles and clothing has created a formidable challenge to the Bangladeshi RMG industry. Dependence on foreign raw materials, political instability, turbulent economy, high bank interest rates, lack of government incentives, poor knowledge of international marketing, port problem, poor infrastructure and labor union are some of the internal problems of Bangladeshi RMG sector. However, in Bangladesh, RMG growth is overwhelming. There was only 5 Garments Company in 1971 which grew tremendously and reached to 12,000 between 2005 and 2012 with a 6.77% growth rate per year. This sector contributes 17.9 percent share to GDP during 2006-2012.

It is a matter of great interest that RMG sector is healthy and handsome due to the contribution of Bangladeshi women from the beginning of the garment industry. Women in Bangladesh have traditionally been excluded from taking part in social, political and economic activities by means of institutions such as for the veil. The rise of the RMG industry in Bangladesh since the 1970s has provided women with opportunities to work outside the home for wages. This change coincided with changes such as a decline in the rural sector, increased emphasis on girls' education and campaigns to improve women's health and reduce fertility. As a result of these changes, the social exclusion of women has reduced considerably. The impact of the industry on women's exclusion is mixed. Women have bigger economic independence, respect, social standing and 'voice' than before. However, harassment and exploitation persist. Given the necessary changes that this trade helps to bring into women's lives, stakeholders should focus attention on making the industry a more humane and sustainable option for them. In 2012, there was 83% female participation in Bangladeshi RMG industry. From the beginning of this industry, poor Bangladeshi women are playing vital role to the prosperity of this industry and national development (Jahan, Zaman and Kamal, 2013; Khosla, 2009). According to Bangladesh Garment Manufacturers and Exporters Association (BGMEA), nearly two million women workers were directly, and more than ten million people were indirectly associated with this industry in 2013. On the average, this sector alone fetches 80% of the total export earnings of Bangladesh (Ahamed, 2014). Despite sturdy economic process and large job creation, employment condition is still backward for the workers of this sector. They work for as little as €50 per month that should be at least €133 in Bangladesh, whereas the living cost of Bangladesh is much higher than that. However, as cheap labor is one of the main factors behind the boost of this sector, too high wage may harm this industry severely (Salam and McLean, 2014).

Contribution of Textile Industry in Pakistan economy found to be 46% share in manufacturing, 54% in export earnings, 8.5% in gross domestic product (GDP) and 38% in employment (Shah, Syed and Shaikh, 2014). 3.25 million tons of clothing and textiles flow through the United Kingdom (UK) each year – approximately 55kg per person. Of this, around half is imported as textile merchandise, a

quarter as 'intermediate products' (mainly fabric and yarn) and the rest as fiber (imported or produced in the UK). Approximately, two thirds of the imports of fibers, yarns and fabrics to the UK are man-made. The UK exports 1.15 million tons of clothing and textiles each year, comprising fibers, fabric and some completed products – mainly clothing and carpets. One fifth of the United Kingdom's annual consumption (by weight) of wear and textile merchandise is factory-made within the UK. Consumers in the UK spent about €1,130 per head per year, purchasing around 2.15 million tons (35kg per person) of which one eighth is sent for re-use through charities and the rest is discarded. The UK clothing and textile industry employed around 182,000 people in 2004 split evenly between clothing and textiles (Allwood et al., 2006).

The European textile industry has been experiencing a pointy decline in the past 5 decades. The European textile industry has been facing an extended amount of decline, rising international competition and relocation to low income countries. Concerning quality of jobs, high-end fashion and stitching production provide a mixed picture. In the market section of high-end fashion, eco-friendly product and eco-labels perceived as opportunities for niche market methods, however recently not for mass markets, as high social and environmental standards lead to higher production costs (Martinuzzi et al., 2011). Although, around 300 small Spanish manufacturers closed their businesses and other international players reduced their presence in Spain because of the general economic panorama in Spain is worsening, with high unemployment rates, reduced purchasing power and political uncertainty, consumers are likely to continue investing in clothing, both in fast, low-cost fashion or for the big names of international players, although the amount of their savings destined for clothing expenditure is unlikely to increase rapidly (Euromonitor International, 2013). Since the manufacture costs were so low in other countries, this sector has been disappearing day by day from the region. Though large expansion of RMG sector seen in world economy, Spain rarely emphasizes on this sector, but it has the potential to get advantage by allowing and giving investors opportunities and support.

Although, several studies seen in the field of RMG sector in developing countries and some are in developed countries, very few can be found on Spanish economy as the sector gets inferior importance by the policy makers. The Association of Science and Technology Parks of Spain (APTE) is spread throughout the nation, it has tremendous importance in economy that encourage developing, innovating and marketing techno-based products where textile and RMG industries are omitted. Due to demand of techno based RMG products and the need for innovation in the industry, there is the need of studying to find the feasibility of RMG inclusion in APTE. However, PCTEx is one of the parks of APTE, thus realizing the socio-economic condition of the region; the researchers chose that arena (Badajoz) to find out the relevance of RMG inclusion at PCTEx.

This study is organized as firstly, the theoretical background in introduction section. Here, the motivation and scope also shown. Then, the next section discusses the general and specific objectives consequently the contrition of the study, then the methodology used in the study described. The remaining parts describe the Association of Science and Technology Park of Spain and the Science and Technology Park of Extremadura. In the fifth section, the relevance of including RMG sector in PCTEx is discussed. Moreover, after data analysis, the final section focuses on the concluding remarks and the actions recommended for the target audience.

2. Research objective and significance

No study found that is based on the proposal for including RMG sector in the Science and Technology Park in Spain. The researchers tend to show the relevance of adding this prominent sector in Badajoz region that will produce techno-based RMG products to meet the needs of the age by having opportunity to run their business profitably which can pursue technological innovation in its operation and thus contribute to the economy as a whole that is the primary objective. The specific objectives include: (i) giving guide to the established and emerging RMG companies from home and abroad having chance in doing business in the region of Badajoz province, (ii) creating employment

opportunity especially for the women in the specified area, (iii) making wealth maximization by expanding the scopes of the PCTEx, (iv) bringing scopes for expanding business for RMG companies from home and abroad and creating opportunity to bring innovation in RMG products.

There are significant contributions of this study. PCTEx as well as The APTE will have the opportunity to enlarge their strategic plan of innovation. This study would be helpful in playing role by PCTEx, APTE, RMG company policy makers to the development of these areas as well as the country economy.

3. Research questions and methodology

The study seeks to answer two questions. Why should PCTEx include RMG in Badajoz zone? How can RMG sector contribute to the park and the economy? To answer these questions, the study followed a qualitative approach in the form of case study. This is a descriptive study done based on primary data source by interviewing the associates working in the association of PCTEx based on open ended unstructured questionnaire and observation methods. The secondary data are collected from the association website, different journal articles, working papers, internet and government & non-government sources. The study result is made based on the information gathered from face to face interview and observation as well as from the previous study result.

4. APTE and PCTEx

APTE is a non-profit association where technology-based companies are registered to conduct their business in support of the park authority. According to Apte.org (n.d.), the ins and outs of the association found in their website discussed in this section. The main objective of the parks is to collaborate, through empowerment and dissemination of scientific and technological parks, renewal and diversification of productive activity, technological progress and economic development. It is an important part of the Spanish System of Science and Technology company. The members of the APTE are science and technology parks located on 17 different autonomous regions in Spain. The companies and institutions located at the parks are the best reference of Spanish System of Innovation. 24 of these parks are sponsored by universities and 46 Spanish universities collaborate with them. In 2015 these parks located 7736 entities that billed 24.427 million euros. These companies provide employment to over 158,950 people, of which 31,243 are engaged in R&D. The diversity of the promoting entities (autonomous regions, Universities, state-owned and private companies) converts the APTE in a network. It is in the headquarters of the Technology Park of Andalusia (Malaga) and was created in 1989 by the managers of the first 6 parks that were created in Spain. APTE is an affiliate member of the International Association of Science Parks and Areas of Innovation (IASP). It currently has 64 member parks scattered throughout the Spanish geography, 48 of them are Full members, 15 are Affiliates that are under development, and finally 1 member is Collaborator. It had 500 member companies, 13,000 employees and 4,777 research and development (R&D) employees with €1,064,000 turnovers in 1997 which reached to 6,452 companies, 151,562 employees and 30,968 R&D employees with turnover €22,327,000 in 2014. During 2014, the APTE have invested 1,112 million euros in R&D activities. The main sectors of the companies located in the Parks are (i) Aeronautics and Automotive 2.6 %, (ii) Training and Human Resources 3.8 %, (iii) Information, Computing and telecommunications 22 %, (iv) Medicine and Health 6.2 %, (v) Agriculture, Feeding and Biotechnology 4.6 %, (vi) Electronics 2.3 %, (vii) Industries 4.6 %, (viii) Engineering, Consultancy and Advising 14.8 %, (ix) Energy and Environment 4.1 %, (x) Centers of companies 1 %, (xi) Technology centers and R&D 43%.

PCTEx, Badajoz is located at University of Extremadura, Badajoz campus, Spain. Here, they developed new products and processes to be transferred to the market in collaboration with researchers of the University of Extremadura and other technological centers. PCTEx is a community where the interaction and transfer of knowledge between researchers and entrepreneurs, with a clear focus on innovation is enhanced. It works as the generator of wealth and employment in the region

of Extremadura. Near 80 companies are registered in this park. These companies employ more than 1200 workers.

According to the article No. 6 of APTE statutes, the physical or legal entities, state-owned or private-owned companies interested in the promotion and the development of Science and Technology Parks, are suitable to become members of the APTE. APTE has two types of members: (i) full members and (ii) affiliated members. The full members are active parks and the associated members are parks in project. The Full member admission fee is €1500 plus value added tax (TVA) (only once). These members must pay €3,446.59 plus TVA in two half yearly installments of €1,723.29. The Affiliated member's fee is €1,723.29 plus TVA to be paid in two installments of €861.64. The Association has achieved an important position in the Science and Technology System of Spain and in the process of new economy integration and the new society of knowledge. For this reason, APTE invite the companies and institutions with interest in the development of Science and Technology Parks to join the APTE. Organizations, projected parks or institutions interested in developing science and technology parks that wish to become affiliate/associate members of the APTE require submitting a presentation of the project, together with the documents: (i) here must be a suitable site for the park, (ii) name of the initiative, (iii) name of the promoters, (iv) articles of incorporation, if drawn up, (v) information about target sectors, (vi) information regarding links with the scientific sector, (vii) non confidential information related to the business plan and others.

One of the most important lines of work of the association is promoting collaboration between parks, their enterprises and other organizations. The objective of APTE R&D Experts Network Project, in which Ministry of Science and Innovation and APTE work together, is promoting knowledge and technology transfer in the science-technology-enterprise system. Five actions to be carried out in this project: (i) Knowledge transfer activities, (ii) Enterprises support activities, (iii) Internationalization of business activities, (iv) Control of project submitted to Ministry of Science and Innovation calls, (v) International Excellence Program support. The objective of APTE COPIT Project (Cooperation program between Trading states and Technology Parks) is increasing the competitiveness and the business opportunities of enterprises located in technology parks and trading states by a cooperation program. The Ministry of Industry, Tourism and Trade, EOI Foundation, APTE, Spanish Coordinating Committee of Trading states (CEPE) and ENISA participate in this program. Four actions to be carried out in this project are: (i) Cooperation between enterprises located in technology parks and trading states, (ii) Trading states census and analysis, (iii) Common services supply to trading states, (iv) New enterprises support. There aren´t any textile industry or RMG company in PCTEx till now.

5. Relevance of RMG inclusion in PCTEx

In 2000, the world's consumers spent around €0.92 trillion worldwide buying clothes. Around one third of sales were in Western Europe, one third in North America and one quarter in Asia. Today, clothing and textiles represent about 7% of world exports. Globally, clothing and textiles production experienced around 26.5 million workforces in 2000. More than one-fourth of the world's clothing and textiles production is in China, which has a fast-growing internal market and the largest share of world trade. In case of clothing and textiles exporting, western countries are still vital exporters particularly Germany and Italy in clothing and the USA in textiles. Output from the sector is growing in volume, but prices are dropping, as is employment, as new technology and vertically integrated structures support improved productivity. The sector is freer than for many years following the phasing out of international quota agreements in 2005 that open out facilities for Spain in this sector, but plenty of agreements that distort the free-market still exist–with USA government subsidies of cotton farmers being prominent (Allwood et al., 2006). To gain competitive advantages in European textile and clothing industry, investments in R&D are necessary, requiring financial resources and skilled staff. As a result, the production costs are expected to be decreased, the product quality should be improved, and the environmental impact be reduced (Martinuzzi et al., 2011). The

PCTEx currently has 64 member companies included in various sectors. It is in 2 different provinces in Badajoz and Cáceres where Badajoz alone has 59 companies and the other has 5 in number. In collaboration with the International Association of Science Parks (IASP), the technicians' network promotes the cooperation between Brazilian, Chinese and Eastern Europe enterprises and Spanish enterprises. Brazil is the best access to Latin American trade, China offers great business opportunities to Spanish enterprises and Eastern Europe is the beginning of the collaboration with Estonia, Latvia and Lithuania companies. APTE works with three organizations in each of these countries in order to promote cooperation. This program allows Spanish enterprises make international technology and knowledge transfer, develop new business and achieve trade agreements. APTE is considered as Knowledge Transfer Office (KTO) since 2004 and in consequence, it promotes and makes stronger relationships between R&D organizations and enterprises. The KTO helps enterprises to look for technology offers and demands published by R&D organizations in order to promote cooperation and obtain fiscal benefits related to R&D activities.

In the question of inclusion necessity, the interviewer's opinion is that it could be a possibility, linked with two factors: (i) New designers in the region with very good ideas and with high potential of ready-made scalable products to the international markets, (ii) The generation of our mothers have engaged in sewing and textile industry from their childhood, so there is an experience and know-how in the sector. The following figure (figure 1) shows the growth prospects by RMG sector.
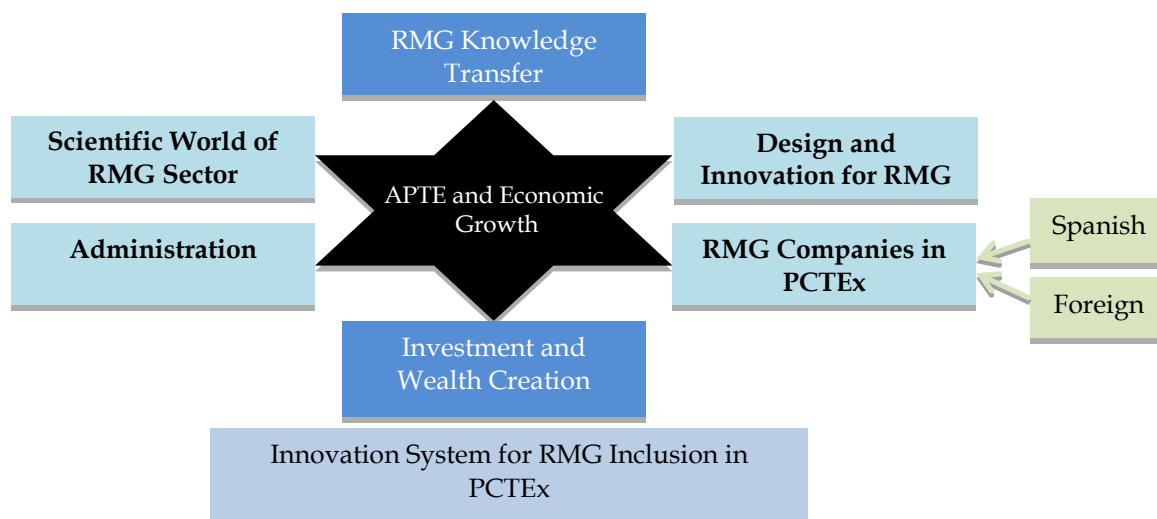
Figure 4: Ready-made garments contribution in the economy by knowledge transfer
Source: Authors

When the RMG firms whether from Spain or from abroad are included, they might foster on innovative ideas in the design and in this way knowledge transfer occur in the scientific world of RMG sector. The proper administration of these companies may tend to further investment in this sector which results in wealth creation. All these procedures must foster the promotion of APTE and economic development of the country. There are possibilities of gaining if RMG sector is included in PCTEx, Badajoz. The availability of low-cost manpower in Badajoz that helps the garment industry to secure a very strong position is the main factor that can instigate the concept of RMG inclusion in PCTEx. Again, PCTEx can ensure much capability to ensure proper quality of the product as per requirement of the global buyers of the international garment market. The strong technology base in Spain has the promising power to develop the innovative garments in this area too. The free trade opens the market of collecting intermediate goods too which will in turn provide payoff by exporting the finished techno-based garments products.

6. Discussion and analysis of data

The textile and clothing sector and EU trade policy of 2011, the EU textile and clothing sectors' main competitive challenges involve being flexible, sustainable and remain competitive; adaptation to sector specific standards closely linked with other industries; difficulty in credit assessment and valuation of Euro. The difficulties in financing are linked to investment intensive textile sub-sectors and technical textiles field. In the last decade, this sector experienced fundamental restructuring and double growth of exports and since 2009 has been benefiting from full quota and license free markets. It has also focused on reorientation towards specializing in high end products and more technical and textiles apparel by emphasizing on more and more research and development activities which is referred to as 'smart textiles' that include an additional technical function such as baby romper suit with pulse measuring transmitter fibers. From the report of Euromonitor International (2013), it is found that, the price remains a crucial factor in purchasing decisions for customers as they seek value for money alongside the best prices and deals available. There has been a continuation of companies offering more discounts and promotions to stimulate demand in Spain. Those already present in the country were forced to implement new strategies, according to the changing purchasing habits of Spanish consumers. The most successful companies seem to have found their own strategy to maintain sales and profit and to conquer a stable position. According to many stores managers, in 2012 the average discount rate increased, by at least 10%. Nevertheless, discounting policies change according to the product, with trousers, jeans, t-shirts and women's dresses as the most discounted garments.

The choice is generally determined by the fact that these products are used to attract the consumer at least inside the store, increasing the opportunity to sell other products. The most important retailers and manufacturers opened factory outlets to reduce stock and give impulse to demand. Off-price retailers, i.e. retailers selling products which are often premium at lower price points, on the internet are also spreading while until 2011, this included mainly international websites from 2012, the number of Spanish off-price retailers increased enormously. In the long-term, the situation may be hard to sustain for companies. Indeed, consumers are spoiled by low prices and promotions and would have difficulty in accepting that they may have to purchase the same quality for a higher price. On the other hand, retailers and manufacturers may see their margins decrease. Getting ready to face this situation, companies are changing their strategies and structures, by customizing their offers, exclusive promotions and attentive communication, especially through the support of mobile devices. According to CMT (Comisión del Mercado de las telecomunicaciones), clothing represents 70% of the purchases, followed by shoes with 20% and leather accessories with 8%. According to the Spanish Association of shopping centers, fashion online sales are expected to increase again. While in 2011, 52% of apparel purchases were through foreign websites, in 2012 the proportion changed in favor of domestic purchasers. The importance of internet retailing is predicted to increase in Spain yet at slower rates. Manufacturers need to overcome some barriers such as the necessity of trying the item before purchasing and to improve the experience of purchasing online. In order to compensate the drop-in consumption of domestic apparel sales, Spanish manufacturers are investing in internationalization to generate new incomes and continue to grow. While imports registered a fall of 9% in the fashion industry, exports showed a record performance, growing by nearly 9% in value in 2012 and reaching more than €10 billion. Despite Europe coping with 65% of Spanish exports, this market grew by just 7% in 2012. They are the markets of Asia and the US which present the fastest growth rates of more than 20% in value terms.

Mexico, Brazil, Morocco, United Arab Emirates, Russia, China, India and the US are dynamic markets for Spanish apparel companies. Parallel to the increment of Spanish exports and the decrease in domestic sales goes the reduction of imports, especially from China. While this country still covers 47% of total import of fabrics and clothing, the importance of European countries, mainly Portugal, Romania and Turkey are rapidly increasing. Zara, Mango and Shana have been pursuing a global marketing strategy. Yet, behind these companies there are important numbers of medium-

sized and even small businesses that are clearly oriented towards international markets. At the end of the review period, there were more than 3,000 regular exporters in the Spanish fashion industry. The positive effects of the internationalization strategy of Spanish manufacturers is expected to last in time, due to the solid basis and reputation of Spanish brands overseas. Structural investments would help to restart Spanish economies, creating new working places. New markets, such as the fast-growing economies of South America, mainly Peru and Colombia, represent further opportunities to generate new revenue. According to Nair (2015), it is important to do an extensive research prior to crafting a business plan accordingly.

7. Recommendation and conclusion

Based upon discussion, the recommendation for the PCTEx is to give emphasize on the sector inclusion in the selected zone of APTE. Realizing the growing need of high-tech RMG products, considering the conducive business atmosphere having high-tech infrastructure, low cost labor, it is recommended to include this promising sector in PCTEx. Prior to do that, it is necessary to make in-depth research to see the real situation and the suitability and contribution made by RMG by its inclusion. If research supports this sector's inclusion, PCTEx should permit their entrance of those companies which have world class recognition primarily so that innovation of their operation can be seen. Selected companies that are technically fast and innovative in nature should be allowed. Primary national companies should be added. Sequentially, internationally prominent companies with high reputation should be permitted to conduct their business operations from the region. In case of companies which tend to do business here should concentrate on the aspects such as having the utmost interest in technology and innovation. They should also have the capacity to do that. The internationalization of their products is also important. Other attributes that can be added quality for RMG companies may include promotion of commercial counselors, streamline inspection regime, simplify procedures, establish good quality testing laboratories and increase existing laboratory capabilities, develop information services, support trade missions, participation in trade fairs, buyer-seller match making and training, develop financing mechanisms for sustainable training etc. Continuous advocacy and monitoring these companies on regular basis are required by the park authority for bring success particularly for ensuring economic gain.

The concluding remark draws the attention of the primary stakeholder of this study, the authority of the PCTEx, Badajoz take initiative to add the sector as it has the potential to contribute to the economy by solving social issues like unemployment, demand of users, and support of the infrastructure. Realizing the fact, this study can be used as a basis for future study in this related field that has contribution. Studies may be conducted based on Bangladeshi Science and Technology parks to consider this sector inclusion with high emphasize as this sector is the promising sector that needs innovation.

Acknowledgement

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Macroeconomic variables and stock returns in Bangladesh: an empirical analysis in the presence of structural breaks

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Keywords
Stock market, macroeconomic variables, Bangladesh, structural break, ARDL, cointegration.

Abstract

This paper examines the long-run relationship between stock market indices in Bangladesh and the selected macroeconomic determinants, such as exchange rate (ER in terms of USD/BDT), domestic credit provided by banks (DCB), industrial production index (IPI), and crude oil price (COP) in the presence of structural breaks. The study relied upon monthly time series data over the period from 2009 to 2017 and applied ARDL bounds testing approach. Both conventional unit root tests (ADF test and PP test) and unit root tests in the presence of structural breakpoints (ZA test, LP test and Bia & Perron Test) have also been used to account for any existing structural break.

The results show that the endogenously determined structural breaks coincide with the resultant effect of the stock market crash in Bangladesh and the oil price shock in 2011. ARDL bounds testing approach confirms the presence of a long-run relationship among the selected variables. The dummy variables (stock market crash of 2010 and oil price shock of 2011) also have a significant effect on the stock price fluctuation in both stock exchanges in Bangladesh. The error correction term suggests that 43.3% of the disequilibrium in Dhaka Stock Exchange (DSE) returns is adjusted monthly to get back to the long-run equilibrium whereas the value is 34.9% for Chittagong Stock Exchange (CSE). Moreover, ER, DCB, and COP have a significant positive impact on stock prices for both stock exchanges.

The policy guideline of this study is that the regulators in foreign exchange market, banking sector, and capital market should work together in order to make prudential regulatory framework with a view to transforming both stock exchanges into a robust one within the South Asian region.

Strategically determinants the impact of macroeconomic factors on import expenditures in Bangladesh

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Keywords
Import expenditure, Real exchange rate, Inflation rate, Interest rate, Bangladesh

Abstract
Purpose: The purpose of this study is to find out the impact of selected macroeconomic factors on imports in Bangladesh. This paper has been used the percentages of import expenditures of the total GDP as a dependent variable and real exchange rate, inflation rate and interest rate as an independent variable.

Research method: In this study, the time-series data analysis had been exploited for collecting data. Also, data were collected from various sources such as the World Bank Economic Indicator, the Bureau of Statistics Bangladesh and the Central Bank of Bangladesh. To examine data, EViews 9 version has been used as the time-series data analysis. Numerous tests have been applied in this paper such as descriptive statistics, visual plot, Augmented Dickey-Fuller (ADF), Johansen test for co-integration, Error Correction Model (ECM), CUSUM and CUSUM square test.

Findings: The test results reveal that there was a positive relationship between import expenditure and inflation rate besides has a positive relationship between import and interest rate. Furthermore, this paper illustrates if the real exchange rate, inflation rate, and the interest rates increase then the import expenditures also increase in the outlook of Bangladesh. Therefore, the import expenditures did not hold because of import expenditures ware highly influenced by selected macroeconomic variables during 1971-2018 in the economy of Bangladesh.

Introduction
Most of the country's economy is not entirely dependent only on its internal resources. Sometimes the government buys products and services from in a foreign country by lower prices. When a country purchases foreign products and services by using foreign currency is called import expenditure. If the value of the currency of the Purchasing Power Parity (PPP) was increased at the same time the demand for the luxury product and services ware increase in an economy. If the quantity of import value is an increase than the demand-pull inflation should have to reduce for the sake of the country's economic stability. The real exchange rate is one of the vital factors for economic development. The real exchange rate is greatly manipulated by not only the import expenditures but also the export earnings. The Central Bank of Bangladesh reserves foreign currency for domestic currencies coverage. Since the real exchange rate could change a country's overall economic circumstance, therefore, the policymaker should conscious about the exchange rate by maintaining and implementing the country's monetary policy.

The purpose of this study is to find out the impact of selected macroeconomic factors on import expenditures in Bangladesh for the period 1971-2018. The analysis of this discussion will help to rightly understand the relationship between real exchange rate, inflation rate, interest rate and the import percentage of Gross Domestic Product (GDP) to intensely discover a country's economic situation. Furthermore, the result of this study will help more significantly to compare the overall economy of Bangladesh with others in point of this relationship in all over the world.

Literature Review
Oluyemi & Isaac (2017) found that in Nigeria import expenditure highly affected by the real exchange rate, but on the other hand real exchange rate do not impact on real exchange rate. For their

study, they have used vector auto regression (VAR) model Augmented Dickey-Fuller (ADF). Alotaibi (2016) examined that there was a negative relationship between the exchange rate and import. He found that if import goes down that time real exchange rate also goes down. Sharma, Kautish & Kumar (2018) examined that in the long run there is a positive significant impact of government expenditure, foreign aid and foreign direct investment on economic growth in India. Their study also shows that in the long run there is a negative momentous relationship between the human capital index and real exchange rate on economic growth. For showing long-run dynamic relations they have used autoregressive distributed lag (ARDL) bounds, model. Rahman (2017) has found that in Bangladesh there has long-run co-integration between export and selected macroeconomic variables by testing the Johansen test for co-integration. His Variance Decomposition (VDC) test shows that in the short run there is no dynamic over the study period 2011to 2016.

Ramzan, Asif & Mustafa (2013) used Augmented Dickey-Fuller (ADF), Johansen Co-integration test and Ordinary Least Square (OLS) to examine the paper goal. Their paper demonstrates that in Pakistan there has a significant long-run relationship between trade openness and macroeconomic variables. In Ghana from the year 1980-2010 Real Gross Domestic Product (GDP) per capita income and macroeconomic factors (Antwi, et al 2013) are correlated. For their study, they have used time-series data and applied Augmented Dickey-Fuller (ADF), Johansen test for co-integration. In Ghana the impact of government spending positively, real exchange rate negatively, petroleum prices negatively, import of goods and services positively on industrial production (Enu, et al, 2013). They suggested that for achieving sustainable industrial growth and development government of Ghana should continue to stabilize the macroeconomic condition. Kemal & Qadir (2015) examined that in Pakistan there was a significant relationship between import, export and real exchange rate. Their study suggests that in the long-run real exchange rates positively impact imports and in short-run imports don't shock by the real exchange rate.

Corrigan (2005) has tried to explore the relationship between imports and inflation in the United States of America. His study results were different from earlier studies. His study's result suggests that the U.S. economy policymaker should concentrate on import trends and exchange rate value. Duasa (2009) examined that in Malaysia the real exchange rate shock significantly impacts import price fluctuation. He has been used vector error correction (VECM) and Malaysian monthly data. After reviewing lots of papers it is very clear that most of the research suggests that different types of macroeconomic policy. No study has done on this specific topic regarding macroeconomic factors affecting import expenditure in the Bangladesh period of 1971-2018. Thus, I have tried to explore this topic. For future study, the researcher can add different types of variables and analysis from different angles.

Objectives

The broad objective of this study is to find the impact of selected macroeconomic factors on import expenditures in Bangladesh's economy throughout 1971-2018. To find out the broad objectives that focus on some specific points. The specific objectives are,
1. To explore the impact of the Real exchange rate on import expenditures in Bangladesh.
2. To identify the influence of Inflation on import expenditures in Bangladesh.
3. To find out the impact of Interest rate on import expenditures in Bangladesh.

Methodology

This study fully based on secondary data. This paper didn't effort to deal with any primary sources of data. Paper has used different sorts of sources for collecting data, such as The World Development Indicator, Bangladesh Bureau of Statistics, the central bank of Bangladesh (Bangladesh Bank) and different Journals, etc. The Paper has been used real exchange rate, Inflation rate and Interest rate as independent variables and import expenditure as the dependent variable. For this study, I have used 48 years' time-series data (1971-2018). To examining data, EViews 9 version has

been used as the time-series data scrutiny. To finding out the paper goals by different types of the test had been applied.

Theory and Model

$$Im_t = a + \beta_0 + \beta_1 Rer_t + \beta_2 Inf_t + \beta_3 Int_t + \epsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

In this model Im_t is representing the Import percentage of GDP, Rer_t is Real exchange rate Inf_t is the Inflation rate and Int_t is the Interest rate. For examining the short-run dynamic in a relationship. Among import expenditure, Real exchange rate, Inflation rate, and Interest rate an ECM model has been developed.

$$\Delta lnIm = a_0 + a_1 \Delta lnRer_{t-i} + a_2 lnInf_{t-i} + lnlInt_{t-i} + \Delta lnIm_{t-i} + a2U_{t-i} + \epsilon_t$$

$$Where, \ U_{t-i} = lnIm2_t - \beta_0 - \beta_1 lnRer_t - \beta_1 Inf_t - \beta_1 Int_t \ldots\ldots\ldots\ldots\ldots. (2)$$

Where, α4Ut-1- expresses the error correction term, it is the residual from the cointegration Equation, α3indicated the error correction coefficient and αi are the estimated short-term Coefficients (Jammeh, 2012).

Results

Econometric Estimations

Table 1: Descriptive statistics

	IMPORT	RER	INFLATION	INTEREST
Mean	5.551333	44.32292	8.915229	7.568458
Median	3.122000	40.24500	8.691000	5.936500
Maximum	84.74900	83.12000	25.00000	34.75000
Minimum	-52.51100	12.04000	1.000000	-11.68000
Std. Dev.	25.03514	23.57260	4.726371	8.379442
Skewness	0.332947	0.192860	0.908957	1.172744
Kurtosis	4.795502	1.668421	4.306676	5.935719
Jarque-Bera	7.334484	3.843766	10.02443	28.23952
Probability	0.025547	0.146331	0.006656	0.000001
Sum	266.4640	2127.500	427.9310	363.2860
Sum Sq. Dev.	29457.63	26116.37	1049.913	3300.108
Observations	48	48	48	48

Sources: Estimated (Im= Import % of GDP, Rer= Real Exchange rate, Inf= Inflation rate and Int= Interest Rate.

From table 1, descriptive statistics result shows that the import expenditure, real exchange rate, inflation rate, and interest rate are asymmetrically distributed. In this table positive Kurtosis meaning that all variable's distribution is peaked (Oskooee, 1993).
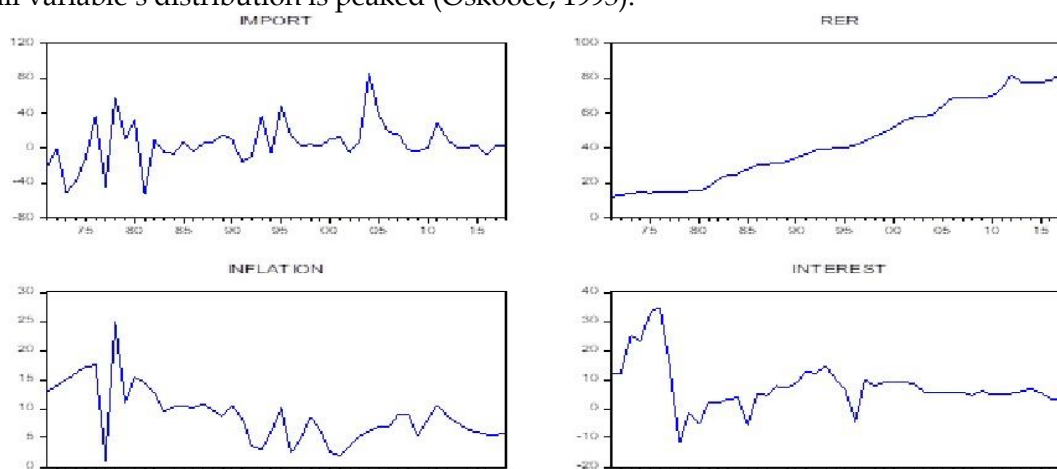
Sources: Estimated (Import % of GDP, Real Exchange rate, Inflation rate and Interest Rate).

Graph 1: Visual Plot

Graph 1 showing the trend all the variables from 1971 to 2018. Here real exchange rate shows this rate was upward sloping. Other variables are normal trend.

Table 2: Augmented Dickey Fuller (ADF) Unit Root Test:

	Augmented Dickey Fuller Test (ADF) Unit Root Test		
Variable	C (constant) and T (trend) in the equation	ADF statistics	Optimum lag
Im	C and T	-6.778943	0
Rer	C and T	-5.562522	1
Inf	C and T	-8.822267	1
Int	C and T	-7.039349	0

Sources: Estimated (Im= Import % of GDP, Rer= Real Exchange rate, Inf= Inflation rate and Int= Interest Rate.

For testing stationery of the all variables Augmented Dickey-Fuller (ADF) test has been used. Augmented Dickey-Fuller (ADF) unit root test shows that all variables are stationary at 1st difference expect Import. Here imports expenditure is just only stationary at level.

Table 3: Johansen test for cointegration

Johansen Test for Co-integration						
Hypothesized No. of CE(s)	Trace statistic	0.05 Critical Value	Eigen value	Hypothesized No. of CE(s)	Max-Eigen Statistics	0.05 Critical Value
None *	45.40828	47.85613	0.384379	None *	22.31571	27.58434
At most 1	23.09258	29.79707	0.243375	At most 1	12.82883	21.13162
At most 2	10.26375	15.49471	0.199720	At most 2	10.24852	14.26460
At most 3	0.015229	3.841466	0.000331	At most 3	0.015229	3.841466

Table 3 represents the Johansen test for co-integration. Johansen test for co-integration shows that there has at least one co-integration equation in this model (Hong & Phillips, 2005). For this one co-integration the Trace statics, Eigenvalue and Max-Eigen value support it.

Table 4: Corresponding Adjustment Coefficients and Normalized Co-integrating Vectors

Normalized co integrating vectors and the corresponding adjustment coefficients				
Variable	β coefficients	αCoefficients	Standard error	t-value
Import	1.0000	-14.99511	–	–
RER	0.0327	0.110452	0.15644	0.44945
Inflation	1.6526	-0.864076	0.94425	2.23728
Interest	0.6924	-1.409773	0.37558	-1.72591
Constant	-23.2060	–	–	–

Sources: Estimated (Im= Import % of GDP, Rer= Real Exchange rate, Inf= Inflation rate and Int= Interest).

From table 4 paper has developed equation 3. From table 4 it can be concluded that there was a positive relationship among import expenditure, real exchange rate, inflation rate, and interest rate.

$$Im_t = 1.0000 + 0.0327Rer_t + 1.6526Inf_t + 0.6924Int_t - 23.2060\epsilon_t \dots\dots\dots\dots\dots\dots (3)$$

From this equation, it can be said that the real exchange rate, inflation rate, interest rate positively impacts on import expenditures.

Table: 5 Error Correction Representations

Variable	Coeffcient	Standard Error	t-value	
Constant	0.610161	4.63819	0.13155	
D(IMPORT(-1))	0.050313	0.17175	0.29294	
D(IMPORT(-2))	-0.030392	0.13792	-0.22036	
D(RER(-1))	-0.610800	1.71186	-0.35680	
D(RER(-2))	1.050814	1.75178	0.59986	
D(INFLATION(-1))	1.297951	0.96385	.34664	
D(INFLATION(-2))	2.069098	0.88138	2.34755	
D(INTEREST(-1))	-1.545688	0.50823	-3.04132	
D(INTEREST(-2))	-1.252648	0.51838	-2.41646	
	D(IMPORT)	D(RER)	D(INFLATION)	D(INTEREST)
R-squared	0.726039	0.156953	0.624462	0.185780
Adj. R-squared	0.655591	-0.059831	0.527895	-0.023591
Sum sq. resids	15061.31	138.7631	481.7480	1613.607
S.E. equation	20.74423	1.991145	3.710017	6.789923
F-statistic	10.30614	0.724008	6.466633	0.887322
Log likelihood	-194.6497	-89.18961	-117.1943	-144.3924
Akaike AIC	9.095543	4.408427	5.653080	6.861886
Schwarz SC	9.497024	4.809908	6.054561	7.263367
Mean dependent	1.186133	1.538222	-0.204178	-0.486156
S.D. dependent	35.34764	1.934126	5.399541	6.711221

Sources: Estimated (Im= Import % of GDP, Rer= Real Exchange rate, Inf= Inflation rate and Int= Interest Rate.

Table 5 representing the Error Correction Representation. From this table, it is very clear that the relationship among all those macroeconomic variables was not stable during 1976-2017. From R-squared value, it is worth saying that the data sets are relatively good for this work. Here imports expenditure can be explained properly because F-statistic is robust enough at a 5% significant level.
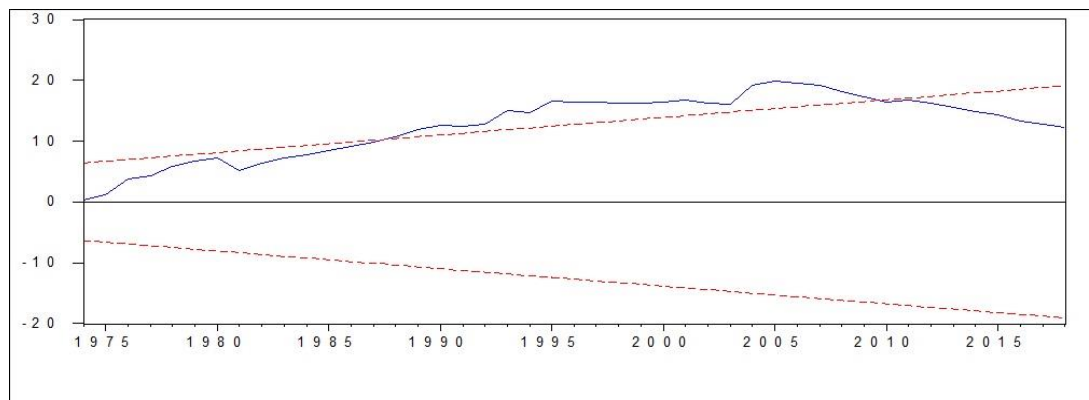
Graph 2: CUSUM Statistics
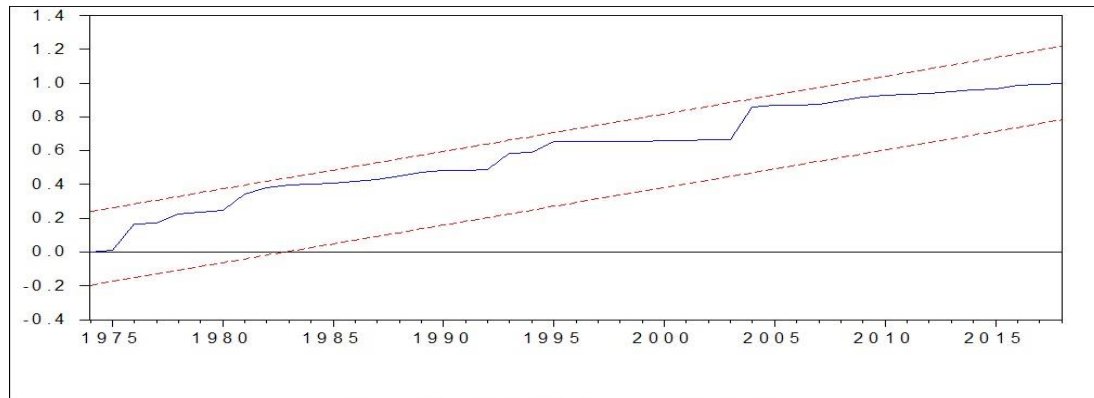
Graph 3: CUSUM Squares Statistics

Graph 2 and 3 are representing cumulative sum (CUSUM) and cumulative sum (CUSUM) square tests. CUSUM statistics shows that blue line crossed the red line so it can be said that out for this paper model was not stable during 1971-2018.

Findings

An import is an indispensable ingredient for a country's utmost development. An import is a good brought into an influence, particularly across a countrywide boundary from an external basis. This paper tried to show the impact of macroeconomic factors on import expenditure and the relationship of the variables. Broadly the paper shows there has a relationship between selected macroeconomic variables and import expenditure of Bangladesh. For equation 3 it can be said that the relationship between import expenditure and the real exchange rate is positive. There was a positive relationship between import expenditure and inflation rate and has a positive relationship between interest rate with import expenditure. Equation 3 suggests that if the real exchange rate, the inflation rate, and the interest rate in Bangladesh go up when the import expenditure goes up. Accordingly, the import expenditures did not hold because of import expenditures ware highly influenced by selected macroeconomic variables during 1971-2018 in the economy of Bangladesh.

Conclusion and Recommendation

Since its independence, Bangladesh's economy has been developing day by day. Bangladesh previously achieved Milliner Development Goals (MDGs) and trying to reach Sustainable Development Goals (SDGs). The export income of Bangladesh's increasing day by day that is making an enhanced economic strength and importing different products and services from roughly all over the world. Finally, it can be said, nowadays the overall economy of Bangladesh is glowing and performing outstandingly for its healthier macroeconomic policy and implementation. The government of Bangladesh should consistently concentrate on effective policymaking with more precisely the implementation process for attaining upcoming Sustainable Development Goals (SDGs).

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The impact of robotics in the growth and economic development

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Keywords
challenges and opportunities, economic growth rate, job creation, robotics, robotics-major countries, robotics market.

Abstract
　　We are currently living in the age of fourth industrial revolution and the world is evolving rapidly as it undergoes with the revolution where robotic process automation will redefine economic activity and lead our way of living into a new era. The technology today around the world are not only changing, but they are upgrading and emerging with one another. And this automation revolution irrevocably impacts on individual, social and economic sectors and the lives of future generations. The purpose of this study is to find out robotics' impact in the economy through worldwide. We represent how intensely robotics enhance the economy of countries throughout the world, especially on some top robotics major countries. We analyzed huge number of previous findings regarding relevant topic and came up with some specific reasons of why robotics is the ultimate booster in the economical factor. Although this is a new field in lots of countries, so there is still significant amount of challenges that must be faced and overcome. We point out some major challenges of robotics major countries and the way they are struggling and finding solutions of those challenges, so that the rest of the world can learn from that, come out of the fear of automation and adopt the technology. Some key opportunities have also been discussed, and there is a little direction of the future of robotics in the economy so that the next generation may have some ideas of the future industrial sector of this field.

Introduction
　　We are currently living in the era of fourth industrial revolution. There is no substitute for robotics to bring the revolutions of automation in the industrial sector. The use of robotics in our daily life is increasing day by day throughout the world.

　　The demand for robots has been accelerating since 2010 due to the ongoing trend toward automation and continued innovative technical improvements in industrial robots. The market study is experiencing a significant transformation, with robots growing beyond the expectations in manufacturing industries and commencing to adopt the roles of personal assistants, surgical assistants, delivery vehicles, autonomous vehicles, exoskeletons, customer service, cleaning systems, defense weapons, agricultural systems, construction service, and unmanned aerial vehicles, among many other uses. From healthcare and homecare, to military use and emergency response, robots are fast becoming a very crucial component in our lives and the lives of future generations.

　　In the very beginning of 1900s, several child stories very narrowly introduce the idea of robots. Officially, the term "robot" first used in a play in 1921 (*Hemal & Menon, 2018).* In this modern era, significant advancement of robots has been initiated, such as, unmanned aerial vehicles, self-driving cars, space robots, software robots, entertainment robots etc. and they are being successful profoundly. They are not only making our life easier but also having a great impact in the growth of the world economy. The evolution of robots in the 20th and 21st centuries has advanced so radically

by including machines that can assemble other machines and sometimes can be confused with human beings.

So, as we can see, started from just e child's book to having impact in the world's economy greatly, robotics has come to a very long way very successfully. And it has been found that the rise of the robots won't stop, instead, more evolutions are coming.

Literature review

Robotics continues to evolve as a large and influential market. Spectacular technological advances in the field of robotics and Artificial Intelligence are being reported every day. The market of Collaborative Robots, Service Robots is expanding rapidly.

A collaborative robot, or cobot, is a type of robot designed to work alongside humans and/or physically interact with humans in a shared workspace. Collaborative robots are experiencing a rapid growth in the robotics market industry. The growth rate mainly lies in the major areas such as, Autonomous mobile robotics (AMR), Machine tending, Pick and place robots, Quality inspection cobots etc. As an example, in 2017, installations of logistics robots increased 162% over 2016 levels. It is expected that in 2018, sales of these systems will increase by 66% over 2017 levels to reach a total market value of USD 3.9 Billion. Much of this growth, approximately 90% of logistics automation systems sold in 2017 were mobile robots for achievement (IFR, 2019).

A professional service robot is defined as a semi or fully autonomous robot for assisting human beings for automation of commercial tasks, also household chores but excluding manufacturing operations. Innovations in machine learning, artificial intelligence, adaptive computing and vision systems is causing the robotics market to nearly triple in value. According to the International Federation of Robotics World Robotics 2018 Service Robots report, the combined market value for 2019 through 2021 for professional service robots is estimated to be worth USD 37 Billion (IFR, 2018).

Overview of some Service Robots which are experiencing exponential growth

The agricultural robot market size is predicted to rise at an intense 21.1 billion USD between 2017 and 2025, from USD 4.1 billion in 2017 to USD 25.2 billion in 2025. The compound annual growth rate (CAGR) is expected to increase at 25.34% between the period. The technology has developed greatly in the past few years and due to its high demand for the Toughest Agriculture Challenges, the technology is expected to grow at a fast rate in the coming years (Markets and Markets, 2017). The production of global construction robot market was 1296 units in 2016, growing at a steady compound annual growth rate (CAGR) of 8.7%, it is projected to reach 2134 units in 2022. On the other hand, the revenue of global construction robots was USD 180 million in 2016 which will rise to USD 321 million in 2022, with a CGAR of 10.1% over the period (Reuters Plus, 2018). Worldwide market for customer service or public relations robots reached $53.77 million in 2016. In 2018, the market grew 53% over 2017, with an estimated 7,000 units sold. It is expected that between 2019 and 2021, with a compound annual growth rate (CAGR) of 37%, approximately 40,500 units will be sold. It is also predicted that by the end of 2022, the market value will reach of USD 87.97 million (Tractica, 2017).

In 2017, defense robots accounted for roughly 11% of all service robots, at a value of $902 million. Alone the military robot market is projected to grow to USD 30.83 Billion by 2022, while it was USD 16.79 Billion in 2017, at a CAGR of 12.92% (Markets and Markets, 2017). Demolition robots are one of the first service robots that were the most feasible robots to maintain applications in labor-intensive industries. Currently, demolition robots are mostly occupied with construction robots a value of 90% of the total market. In 2016, the global construction robot production was 1296 units and the revenue were USD 180 million. It is expected that the production will be 2134 units and the revenue will be USD 321 million by 2022, with a global compound annual growth rate (CAGR) of 8.7% and 10.1% respectively between 2016 and 2022 (Wise Guy Reports, 2017). The market for exoskeleton robots is expected to explode in value to USD 2,810.5 Million by 2023 from USD 104.3

Million in 2016 and the compound annual growth rate (CAGR) will be of 45.2% between 2017 and 2023 (Markets and Markets, 2017). In 2018, there were approximately 7,210 field robot units sold. It is estimated that 32,700 units will be sold between 2019 and 2021, representing a 22% compound annual growth rate (CAGR). The growth of this sector is massively dependent upon the financial prosperity of farmers (RIA, 2019). The humanoid robot market is the most striking technology in recent era and the growth rate and demand are gigantic. It's projected that the market for humanoid robots will be valued at USD 3.962.5 million by 2023 from USD 320.3 million in 2017, growing at an astounding 52.1% compound annual growth rate (CAGR) between 2017 and 2023 (Report Buyers, 2017).

Industrial cleaning robots are expected to experience a significant growth. An estimated 3,000 units will be sold between 2019 and 2021 where the bulk of them will be floor cleaning systems. The unit shipment of global industrial cleaning robot will be likely at a CAGR of more than 74% during 2016−2022 (Research and Markets, 2017). The global market for inspection robots is expected to grow at a compound annual growth rate (CAGR) of 21% with the projected market size of USD 3.72 billion by 2021 (technavio, 2017). With a 162% increase over 2016, Logistics robots experienced robust growth in 2017 where 69,000 units were installed. It's predicted that the growth in robots for logistics forecast will be at a value of USD 31 billion by 2020. It's also estimated that 485,000 units will be sold in total, rising at a rate of 18% compound annual growth rate (CAGR) between 2019 and 2021 (Green, 2016). Medical robot sales were accounting for 2.7% increment of all professional service robot sales in 2017, sales increased 73% over 2016. The medical robot market is projected to reach USD 22.10 billion by 2027 from an estimated USD 6.46 billion in 2018, at a CAGR of 14.6%. Between 2019 and 2021, roughly 22,100 units are estimated to be sold. Due to the drop in the price of sensors and software, Grand View Research projected the medical robotic systems market will be growing at an estimated compound annual growth rate (CAGR) of 12.6 percent from 2014 to 2020 and will be worth USD 18 billion by 2020. According to Visiongain, revenues and volumes are forecast to extend in the surgical (which was accounted for 60 percent of medical robots in 2016), rehabilitation, non-invasive radiosurgery, and hospital/pharmacy submarkets. North America will be accounted for the largest share of the medical robotics market, followed by Europe and the Asia-Pacific (Markets and Markets, 2019).

There are other sectors too where the robot shipment boomed, such as, food and consumer goods sectors, manufacturing industries, retail sector etc. In food and consumer goods sectors, shipments of robots surged 60 percent in 2018 compared to the year before. In manufacturing industries, automation is becoming increasingly prevalent, viable and beneficial because of the competitiveness among business industries leading the best business productivity in least labor cost and cheaper machines (Business News, 2019). Employment figures show that the US added the highest figure of 327,000 manufacturing jobs between July 2017 and July 2018 since 1995. The sector also improved by the boost of overall economic activity and a cut in federal tax in the same period. Data from the Bureau of Economic Analysis also announced that US manufacturers are producing at near-record levels. Sales were strong across the board and it is expected that more than 1.7 million new industrial robots will be installed by 2020 (Perryer, 2019).

Research methodology

The research process is the heart of any research methodology and the application of scientific methods to discover solutions of the complex task. Following is the research methodology that has been followed throughout the whole research process,

Came to know the various tracks of The International Conference on Globalization, Entrepreneurship and Emerging Economies (ICGEEE).

Analyzed the tracks and select the most enthusiastic topic in the 4IR era.

Brainstormed about the topic and structured the research title.

Examined the research title and research directions.

Brainstormed about what will be considered as key elements of the research.
Studied and analyzed relevant literatures.
Analyzed the change of overview of preceding and existing situation regarding the research topic.
Discussed the current perspective based on the topic and finally concluded.

Findings

According to Junji Tsuda, President of the International Federation of Robotics, the mark of 400,000 robot installations per year has been passed for the first time in 2018 [1]. The robotics market was valued at USD 31.78 billion in 2018 and is expected to register a Compound annual growth rate (CAGR) of 25% over the forecast period of 2019-2024 [2]. The new World Robotics report released by International Federation of Robotics (IFR) in 2019, shows a new record of annual global sales value of robots of 16.5 billion USD in 2018 [1]. 422,000 units were shipped globally in 2018 which is an increase of 6 percent compared to the robot shipments in 2017 (IFR, 2019).

Top Five Major Industrial Robotics Markets

According to International Federation of Robotics (IFR), five major industrial robot markets, China, Japan, Republic of Korea, the United States and Germany represented 74 percent of global robot installations in 2018 (IFR, 2019).

Economic Advancement

China owns gigantic deployment of country's dominating electronic and automotive manufacturing sector which makes them domineer in the regional adoption rate of robotics. China held its number one position of being the world´s largest industrial robot market with a share of 36% of total installations in 2018, about 154,000 units were installed which was 1% less compared to 2017 but more than the number of robots installed in Europe and the Americas together. The value of installations rose 21% higher than in 2017 reaching 5.4 billion USD. Also, Chinese manufacturers gain domestic market share (IFR, 2019).

Japan is the world´s predominant and number one industrial robot manufacturer. In Japan, the average annual growth rate was 17% since 2013 which was already remarkable for a market with a highly automated industrial production. But in 2008, Japan reached its highest value ever for the country in robot selling. Robot sales increased by 21% to about 55,000 units and delivered 52% of the global supply in 2018. The most productive manufacturing sectors in Japan are automotive and electronics which are massively reliant on automation for production processes (IFR, 2019).

To enhance the U.S. industries in both domestic and global markets and to compete with the rest of the world with the production rate of the country, all manufacturing industries of U.S. has been playing a strong role in the current trend of automating production since 2010. Resulting, in 2018, robot installations in the United States increased to a new peak for the eighth year in a row, reaching approximately 40,300 units. This is 22% higher than in 2017. Regarding annual installations, the country has taken third position from the Republic of Korea (IFR, 2019).

According to data seen by an international news organization, Reuters, robot shipments reached 28,478, nearly 16 percent more than in 2017. In 2018, robot shipments to food and consumer goods companies deluged 60 percent compared to 2017 while shipments to semiconductor and electronics plants were up over 50 percent and shipments to metal producers rose 13 percent (Aeppel, 2019).

According to a research study by Transparency Market Research, robots will drive the global robotics market to $147.26 billion USD with North American firms accounting for a large percentage of that revenue because of improving efficiency and automating business processes using robots that has been overwhelmingly a popular choice. The report predicts a 17.4% revenue increase in the compound annual growth rate (CAGR) from 2017 to 2025 (Transparency Market Research, 2018).

U.S. has experienced a productive year in 2018; while in Asia robot sales were down, in the America it was up 6%. The robot sales were up 15% from 2017, while both Canada and Mexico were down 15% and 13%, respectively (Tobe, 2019).

The Republic of Korea so depends on the electronics industry that the Korean machinery industry has declined its import and export business except for the machine tool industry. Because of the growth of the Korean automobile, electronics, and machinery industries, the demand for investment of equipment and facilities in these fields is also escalating. In the last year, the Korean electronics industry had a tough year. As a result, the annual robot installations in the Republic of Korea in 2018 declined by 5% and about 38,000 units have been sold. Still, installations have increased by 12% on average per year since 2013 (IFR, 2019). The Korean robotics market is expected to grow to as much as CHF 4 billion by 2019 (Switzerland Global Enterprise, 2018).

To achieve the goal of maximizing the efficiency of the machining process, high-speed multitasking machining systems are being used. As Korean automobile, electronics, and machinery markets hold the largest portion of the entire machine tool market, which accounts for about 50% in 2019. It is growing faster than the growth rate of the entire machine tools market. It is expected to grow at a compound annual growth rate (CAGR) of 9.46% in 2019, and its size is expected to reach about CHF 16 billion. Japan, Germany and Switzerland are competing in the Korean market, regarding high-end products such as precision machining equipment and grinding machines, where sales of Korean domestic products amount to 31% (Switzerland Global Enterprise, 2018).

Germany is the number one largest robot market in Europe and fifth largest in the world. Machine vision sales maintained a record level of 2.6 billion euros in 2017 [7]. In 2018, the number of robots sold rose to a new all-time record of 26% to almost 27,000 units [1] and according to VDMA, the German robotics and automation sector's growth was 4%, reaching a total turnover of 15 billion euros for the very first time in 2018. Currently, the VDMA predicts that sales in 2019 will increase by 2 to 5% to sales of somewhere in the 15.3 to 15.7-billion-euro range. Installations are mainly driven by the automotive industry (VDMA, 2019).

Global Robotics Markets

Asia is the world's largest industrial robotics market that grew by 1% in total in 2018. In 2018, robot installations in China and the Republic of Korea declined, while Japan increased considerably. Europe, the second largest market in robot installations, installations increased by 14% and reached a new peak for the sixth year in a row. In the America, the growth rate reached 22% more than 2017 which also marks a new record level for the eight year in a row (IFR, 2019).

By region, Europe has the highest level of robot density worldwide, with 106 industrial robots per 10,000 employees installed in the manufacturing industry, while Germany is in 3rd position, Sweden is in 5th, Denmark is in 6th, Belgium is in 9th and Italy stands in 10th position, all make the top 10. The UK ranks 22nd worldwide with a density of 85 units, which is equivalent to the global average. China overtook the UK in 2017 and is currently ranked 21st with 97 units (IFR, 2018). While in 2017, robot sales in the United Kingdom had risen by 31 percent, installations of industrial robots fell by 3 percent to 2,306 units in 2018. Although the European Union´s recent sales numbers are still positive, up 12 percent, according to the preliminary results of the World Robotics Report 2019 (IFR, 2019).

In 2018, Singapore was the 6th largest receiver of U.S.-made products such as replacement parts and end-of-arm tooling, which totaled USD 21 million in exports of industrial robots and industrial robot parts (Export, 2019).

Bangladesh is a developing country and a land of great opportunities. Although there are very few robotics industries has been established in our country recently, but it is believed that there are a lot of possibilities to develop a robotics foundation in Bangladesh in near future. The most pleasant point is that the young generations of Bangladesh have already proved their creativity for constructing multi-dimensional robots. The students of Bangladesh have made an impact in global

robotics competitions, but robotics education at the tertiary level in Bangladesh is still very much in the early stages due to lack of adequate facilities and resources in our country, many researchers are unable to run their research properly, losing thousands of probabilities. In this context, the young generation should engage themselves in applied and basic research in robotics.

India is the world's fourth largest vehicle producer by OICA´s production statistics. It had just about 2,100 industrial robots installed in its automotive industry (IFR, 2018).

Discussions

There are varieties of opinions regarding the disruption of technologies and the impact of the disruption specially on human labor. Some argue that large number of jobs could be impacted by disrupted technologies while others claim that intelligent technologies will lead to new job creation. For example, it is suggested that 47 percent of all jobs in the United States could be eliminated or significantly changed by computerization and intelligent digital technologies compared to 57 percent in OECD countries, 69 percent in India, 72 percent in Thailand, 77 percent in China, and 85 percent in Ethiopia. According to a report from Oxford Economics, around 1.7 million manufacturing jobs have already been lost to robots since 2000. These include 260,000 jobs in the US, 400,000 jobs in Europe, and 550,000 jobs in China. According to the repost, global stock of industrialized robots has more than doubled since 2010 and If this rate of robotization stands, the global manufacturing workforce will shrink by 8.5% by 2030 (Ahmed, 2017).

Oxford Economics also found that each new robot installation replaces an average of 1.6 manufacturing employees. Because of the advancement of AI, machine learning, and engineering, the use of robots in service industries will also increase rapidly in the coming five years. This will impact sectors such as logistics, healthcare, retail, hospitality, and transportation. According to analysis firm Oxford Economics, up to 20 million manufacturing jobs around the world could be replaced by robots by 2030 due to the rise of artificial intelligence (AI), machine learning, and robotics (Rayome, 2019).

So, what is the strategy of robotics being the economic booster while decreasing such a huge amount of jobs?

Because, the number of advantages is lot higher than the number of disadvantages. By increasing automation will also boost jobs and economic growth.

Demand for Labor: Rise of new opportunities creates new jobs that may not have existed a decade or more ago. Robot automation reduces demand for labors to perform routine tasks, but it also increases employment in other job sectors such as software engineering, training, robot maintenance etc. These jobs offer higher level payment than the manual occupations. So, it leads to direct and indirect influence on employment numbers, therefore, it improves competitiveness and trend rate of economic growth of a country. On the other hand, installing robots as a substitution of labors increases productivity and lower the unit of costs of supplying products in the least amount of time.

Job Creation: Because of the robotics industry, an estimated 500,000 to 750,000 new jobs were created between 2008 and 2011. As a result of this growth, productivity level in manufacturing companies was increased. While several employees have earlier been displaced by the robotic solution, the increased efficiency also led to increased productivity. This improved output has historically led to lower prices and increased demand for more circulating products. As more people work together to deliver products to consumers, entirely new market segments resulted. As these automated systems continue to provide value in the manufacturing industry so naturally the demand for more, newer, and better systems continue to rise. And this increases the demand for qualified people in the robotics industry. At the same time, these manufacturing companies require people to do varieties of works such as, manage, maintain, and program the new material handling robots, conveyor systems, as well as other automated solutions. The robotics industry is generating around 170,000 jobs worldwide on its own, according to some estimates. Tens of thousands more are

accounted for by the operators and technicians who use and deploy these robots, and those figures do not include jobs created indirectly due to increased productivity (Colzani, 2018).

Improved Efficiency and Work-Speed: In the workplace, the use of robots implies that manufacturing will always be fast and effective. Robots do not need to take breaks, sleep, go on vacation, take sick leave, don't get bored in repeating tasks, unlike human employees. This effectiveness implies higher production and higher profits, efficiently.

The company productivity has risen, as a result, businesses achieve more profits. Also, company loss has been reduced because flawed products are sheared down to almost none.

Cost Effectiveness: Labor wages are increasing day by day. So, it is cost effective to install a robot rather than paying high salary to multiple number of employees. It is easier and cheaper to install a robotic system rather than paying employees who are not efficient in his job. Apart from the affordability and user experience, size and shape also play an essential role in driving the robotics industry. So, declining sensor prices and increasing adoption have further aided lower costs.

Make our work easier and safe: From simple farming tools to current-day assembly-line robots in factories, technology has played a vital role in making work more efficient for thousands of years. Robots are becoming present in more and more feasible and beneficial in business. They work right alongside human workers or completely replace them where the task is dangerous or repetitive. For example, Tesla Motors has fully robotic and automated assembly lines for its electric cars and batteries. Amazon uses a variety of robots in its warehouses to stock inventory, retrieve and package items.

Productivity Growth: Growth results from one or a mixture of three things: increases in the quality of labor, increases in capital and total factor productivity (TFP), also known as multi-factor productivity. Higher living standards come through higher wages, lower pricing of goods and services, and an overall greater variety of products and services. Labor productivity growth, as measured as output per hour leads these things to occur.

Gross Domestic Product Growth: With increased productivity comes an increase in gross domestic product (GDP) automatically. Graetz and Michaels researched on the effects of robots in the economy on 17 countries including the United States and analyzed a variety of data for a 15-year period ending in 2007 and found that, across the 17 countries, the increasing use of industrial robots over the time period raised the annual growth of GDP by 0.37%, on average (Graetz & Michaels, 2015). According to the estimation by Oxford Economics, USD 5 trillion additional global GDP would be created if robot installations rose 30% worldwide (Oxford Economics, 2019).

Conclusion

Robotics has a significant role in global economy, social and daily life. Robots are the most technological advancement that make living easy and industry work more safe, convenient and beneficial. It is one of the leading drivers of competitiveness and flexibility in large scale manufacturing industries, therefore, in the growth of economy. Robotics has a great impact in successfully running the wheel of development of many European, American, Asian and rest of the continents' manufacturing industries.

Although Robotics already built its foundation strongly in the industrial sector by underpinning enormous amount of employment, there are some challenges that still need to overcome. Specially in the small manufacturing industries, robotics has become a threat of replacing human workforce, therefore, replacing jobs. But the opportunities are already outweighing the threats and new demands are being discovered continuously.

The field of robotics research is going to be competitive and designing patents for global industries according to their nature of applications will be very competing. The demand of robotics technology is extending in wide range of applications and human activities, such as manufacturing, consumer industries, medical, transportation, service, space, defense etc. Robotics is a new technology domain that human factors scientists and practitioners should enter, to represent the

human role in automation. Because in the future, we are expecting to experience a huge technical transformation and it is not very far that the world will be run by both human and robots together.

Limitations and direction for future research

Robotics is still in its initial phase, so, while in invention of a new system also brings lots of challenges with it.

Challenges:

Some major challenges that the top robot market countries are still fighting to overcome,

The biggest challenge for Chinese robotics manufacturers is the lack of knowledge and skilled workers. Foreign companies mainly perform better in manufacturing core components because of precision machining. As a result, foreign companies account for 75 % of the total sales within the Chinese market (*Renéry, 2019*). Another challenge will be to replace the current working-age population. It is estimated that, by 2030 the working-age population will drop from 1 billion to 960 million and even worse, to 800 million by 2050. It also means automation will have to fill the loss of approximately 200 million workers decreasing in work force (*Renéry, 2019*).

As the humanoid robotic sector is in its inception phase so there lies robotics standards and regulations in Japan. Long term investment is a high-risk factor as a single lapse sometimes could cause a great lose. Since humanoid robots are used in individual's service so trust is the most crucial factor in this field; one single mistake could lead someone's life in danger.

Dr. Byron Clayton, chief executive officer of the USA Advanced Robotics for Manufacturing (ARM) Institute, addressed "workforce development" as the biggest challenge in the world of engineering. He stated the lack of understanding and knowledge of codes and standards of graduates who are not prepared for workforce is the common and concerned issue because this creates fear of abolishing robots in the future because of efficient workers (ASME, 2019).

As **South Korea** is the leader in robotics industries so their strategies, policies and investments may not necessarily be in beneficial use in the short-term processes. No country can be certain that the way it is going will hold its market dominance permanently.

Although Germany is very strict on maintaining privacy and security of data, especially regarding surveillance, there was a breach in February 2017 by a banned robotic doll called "My Friend Cayla" (Vijay, 2015). Through its microphone data of a child with whom the doll used to interact were collected and sent to an American company. This is a very big struggle not only for Germany but also to many countries who are still trying to maintain privacy and security with phone calls and e-mails.

Opportunities

As the challenges are rising continuously so do the opportunities are making their ways. Though the opportunities are much fewer in developing countries, but they are fighting their ways worldwide.

Here are some opportunities in the major robot industrial countries,

The Chinese robotics industry has a bright future due to the "Made in China 2025" strategy. Also, the rise of Chinese labor costs, the shortage of skilled workers and the aging population are other key factors of Chinese industrial robotics revolution. To fulfill the purpose of modernizing the Chinese economy, currently the number stands at 68 per 10,000 workers. Also, the Guangdong province is investing $150 billion into industrial robots and new automation centers. It offers many opportunities for Chinese companies as well as foreign companies to develop the market and set themselves as leaders (*Renéry, 2019*).

Another key opportunity is the GBA or Greater Bay Area, an international innovation and technology hub which is a great platform of robotics competition. Economists predict that the GBA could generate a record amount of foreign capital invasions of up to US$125 billion into China's stock market in 2019 (*Renéry, 2019*).

Japan has plenty of opportunities in robotics industries. Because of the growth of demand in human assisting robots, relevant work as software development, maintenance, hardware installations etc. is increasing rapidly. User consumer characteristics have been developed; insurance companies are becoming more vigilant.

The Population Division of the UN Department of Economic and Social Affairs released an estimation for Japan that demonstrated the country's population will go below 100 million shortly after the middle of the 21st century. By the end of the century, Japan stands to lose 34% of its current population (UN, 2001). So, it is expected that the automation will be the major driving factor of the economy of the country. Also, Europe faces the same population ageing as Japan which makes them to rely on each other regarding the fact of reducing labor cost and increasing of manufacturing productivity.

According to robotics industry insiders, robots can bring jobs back to the USA, and have impact on improving factory productivity as well as helping manufacturers acquaint to changing consumer preferences. Ulrich Spiesshofer, CEO of robot maker ABB, is enthusiastic about the potential for bringing manufacturing back to the U.S. from low cost countries. He thinks automation technology can help U.S. factories get production costs to Chinese levels. The reason of saving jobs in America while the Chinese adopt the same technology is relative wage rates. The average U.S. factory worker makes about $16 per hour whilst the rate in China is more like $2 to $4 per hour (Root, 2019).

According to president of South Korea, Moon Jae-in, the government has set a goal of turning the nation's robotics industry into a 15 trillion-won ($13.3 billion) industry, the fourth-largest player in the world by 2023 by fostering 20 major robotics companies. The 20 companies refer to firms that generating 100 billion won each in sales. The Ministry of Trade, Industry and Energy declared to fund the distribution of 7,560 manufacturing robots to replace human workforces in the areas of textiles, foods and beverages that have been losing workers repeatedly due to adverse work environments and work ferocity. At the beginning of 2020, the government plans to inject 300 billion won of research and development funds in the service robots due to its inception level of development in Korea. The funds will help foster robots to provide help to growing need in areas of caring, clothing and logistics (Ji-hye, 2019).

Germany is investing for more than €350 million ($391.9 million) to jumpstart fourth industrial revolution, which would apply robotics, artificial intelligence, and the Internet of Things to advanced manufacturing (Prakash, 2017).

On the other hand, German robotics industries are really concern on robotics rules, laws and regulations. Such as, in 2016 the German transport minister proposed three rules for autonomous systems which is called "Three Laws of Robotics or Asimov's Laws" by the science fiction author Isaac Asimov and the main theme of those rules is robot ethics which is not to harm and must to obey human beings (Asimov, 1942).

Unlike other robotic major countries, Germany isn't worried about technological unemployment due to the upcoming wave of robotics revolution. German businesses have taken different approaches so that there won't be any aggregate effect on German employment, instead robot exposure is found to increase the chances of workers staying with their original employer.

German robotics laws are cracking the books while the rest of the world is still discussing possibilities.

Future of Robot Industries

In the future, the number of smart factories is expected to increase further due to developments in the Internet of Things and cloud computing, therefore, the industrial robot market is expected to grow further. In particular, demand for collaborative robots that work with humans in the industrial field is expected to increase.

IFR estimates shipments in 2019 will diminish from the record level in 2018 but expects an average growth of 12 percent per year from 2020 to 2022. According to Junji Tsuda, President of the International Federation of Robotics, the IFR´s longer term outlook shows that the ongoing automation trend and continued technical improvements will result with an estimate of about 584,000 units in 2022 (IFR, 2019).

Asia is expected to record the highest growth rate over the forecast period, owning to significant installation of industrial robots throughout the region.

According to the authors of Oxford economics, the inconvenient effects of robotics have thus far been small compared to those just over the horizon. Over the past two decades, the robot uses in whole worldwide has been increased by three-fold to a total of 2.25 million. As the trend is stirring so the global stock of robots will multiply even faster in the next 20 years. By 2030, the stock will reach as many as 20 million where China alone will have 20 percent of the global total up from .1 percent in 2000. The report found that China currently has the most robots installed, representing one out of three worldwide. By 2030, China will have as many as 14 million manufacturing robots in use, consolidating its position as the world's largest manufacturing hub, the report predicted (Oxford Economics, 2019).

Historically, technology has created more jobs than it has destroyed, so automation will also create jobs. AI alone is expected to have an economic impact of $15.7 trillion by 2030 (World Economic Forum, 2019). As industry costs are falling so industrial robot sales are skyrocketing. And this trend is expected to continue where the cost of robots will be falling by 65% between 2015 and 2025. As the cost of labor generally rising so this makes it more difficult to keep low-skilled jobs. Research has found that roughly 48% of hours primarily relied on the use of manual or physical labor in North American and European manufacturing jobs. It's estimated that only 35% of time will be spent on such routine work by 2030 (World Economic Forum, 2019).

According to a recent report from a multinational professional services network, PricewaterhouseCoopers (PwC), the impact on Organization for Economic Co-operation and Development jobs or OECD jobs will start to be felt in the mid-2020s. As example, it's projected that 10-15% of jobs in manufacturing, transportation and storage, and wholesale and retail trade sectors will have high potential for automation by 2025. By 2035, the range of jobs with high automation potential will be closer to 35-50% for those three sectors (World Economic Forum, 2019).

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Competition and liquidity creation: comparison between Islamic and conventional banks

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Key words
Liquidity creation, competition, Islamic Banks.

Abstract
This paper aims to investigate the impact of competition on liquidity creation between Islamic and conventional banks. Annual data are analyzed for 358 conventional banks and 56 Islamic banks from 24 countries for the period 2001-2018 where dual banking system exists. Using fixed effect estimation technique, we find that a higher competition in both banking systems lower the liquidity creation. The impact is more pronounced for Islamic banks than conventional banks. We further split the sample based on bank size. Our results show that impact of competition on liquidity creation is more for smaller banks than larger banks across Islamic and conventional banks. Finally, we find competition increases liquidity creation during financial crisis across Islamic and conventional banks. The results presented in this paper hold when subjected to various robustness checks.

A study on impact of BREXIT on UK Business

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Keywords

Foreign direct investment, FDI, Brexit, labor market

Abstract

Foreign direct investment (FDI) raises national productivity and therefore output and wages. Multinational firms bring in better technological and managerial know-how, which directly raises output in their operations. The main objective of this study is to measure the impact of the British exist from the European Union on foreign direct investment and its impact on UK business. The expectation generates problems on labor markets, and the England policies should create a more flexible labor market and a stronger orientation towards other countries outside the Europe.

Introduction

In June of 2016, voters in the United Kingdom decided to leave the European Union, a decision popularly known as Brexit. FDI also stimulates domestic firms to improve for example, through stronger supply chains and tougher competition. In the European Union half of the turnover over £1 trillion, is from the United Kingdom other members of the Part of the European Union. UK's attractiveness for foreign investors is that it brings easy access to the EU's Single Market. The dissolution means that multinational firms of the United Kingdom and European Union no longer enjoy free movement of capital across each other's borders as their subsidiaries will be subject to more stringent regulations and higher production costs.

The United Kingdom increases international lending, which finances the production of others both domestically and abroad, and inward FDI rises. U.K. consumption falls and leisure rises, implying a negligible impact on welfare. In the European Union, declines in investment and production are modest, but the welfare of E.U. citizens is significantly lower. Finally, if, during the transition, the United Kingdom reduces current restrictions on other major foreign investors, such as the United States and Japan, U.K. inward FDI and welfare both rise significantly. Brexit, higher trade costs with the EU would be likely to depress FDI. •Our new empirical analysis looks at bilateral FDI flows between 34 OECD countries (including the UK) over the last three decades. Controlling for many other factors, the baseline estimate is that EU membership has raised FDI by about 28%.

We estimate the impact of these capital restrictions on foreign investment, production, and welfare—in the United Kingdom, European Union, and other nations that hosted E.U. If the European Union remains open, its citizens enjoy a modest gain from the increased U. K. investment since it can be causelessly deployed in subsidiaries throughout Europe. If instead we assume that the European Union imposes the same restrictions on U.K. FDI, then E.U. firms invest more in their own R&D, benefiting the United Kingdom. With costs higher on both U.K. and E.U. FDI, we predict a significant fall in foreign investment and production by U.K. firms.

The positive effect of EU membership on FDI is robust, ranging between 14% and 38% under different statistical assumptions. The size of these effects is also consistent with comparisons between UK FDI flows and a set of matched control countries. •Striking a comprehensive trade deal – for example, joining Switzerland in the European Free Trade Association – would not significantly reduce the negative effects of Brexit on FDI, according to the data. Assessing the impact of lower FDI on income is complex.
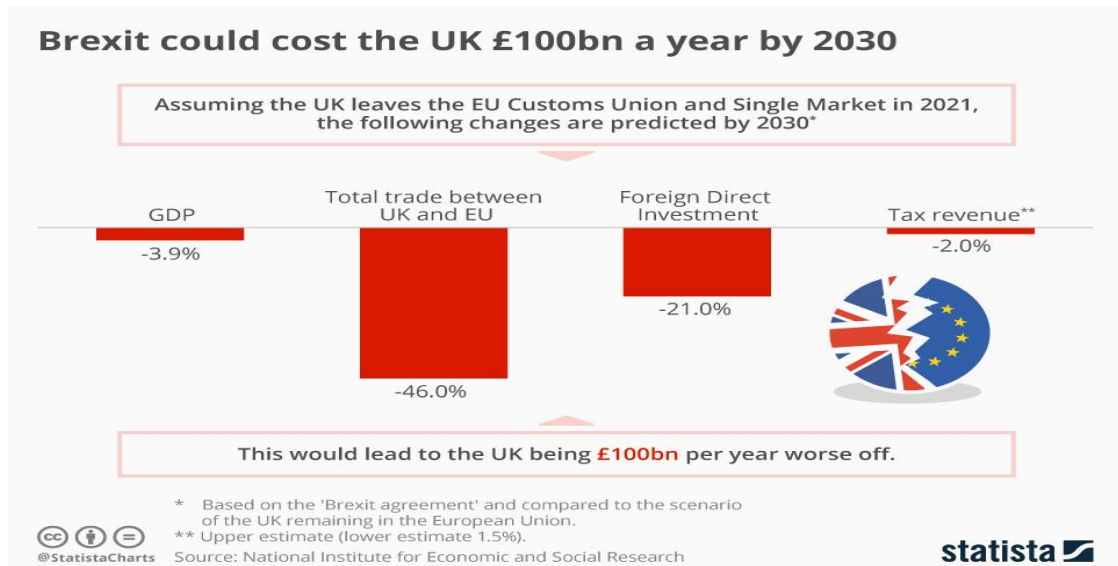
We use existing macroeconomic estimates of how FDI affects growth combined with a very conservative estimate of the impact of Brexit – a 22% fall in FDI over the next decade. We calculate that a Brexit-induced fall in FDI could cause a 3.4% decline in real income – about £2,200 of GDP per household. The income losses due to lower FDI are larger than our estimates of static losses due to lower trade of 1.3% to 2.6%. •Estimates of the impact of Brexit on the UK's car industry imply that UK production would fall by 181,000 cars (12%) and prices would rise by 2.5%. Even if the UK manages a comprehensive trade deal and keeps tariffs at zero, production would fall by 36,000 cars. The UK's financial services industry is the largest recipient of FDI. Restrictions on 'single passport' privileges following Brexit, would lead to big cuts in activity. Furthermore, the UK would be unable to challenge EU regulations at the European Court of Justice.

Impact of Brexit on Businesses in the UK

In a historic referendum on June 23rd, 2016, Britain voted to leave the European Union. After which, the pound fell to its lowest since 1985, immediately after the result was declared. The UK is considered one of the best countries to start a business, but that could change due to the unknown effects Brexit could bring. There are Brexit campaigners who have optimistic predictions for Britain and its businesses. But there are still many sceptics who predict that this has been a big mistake for Britain, and that it will be seriously impacted by multiple factors.

Costs of Brexit to UK Businesses
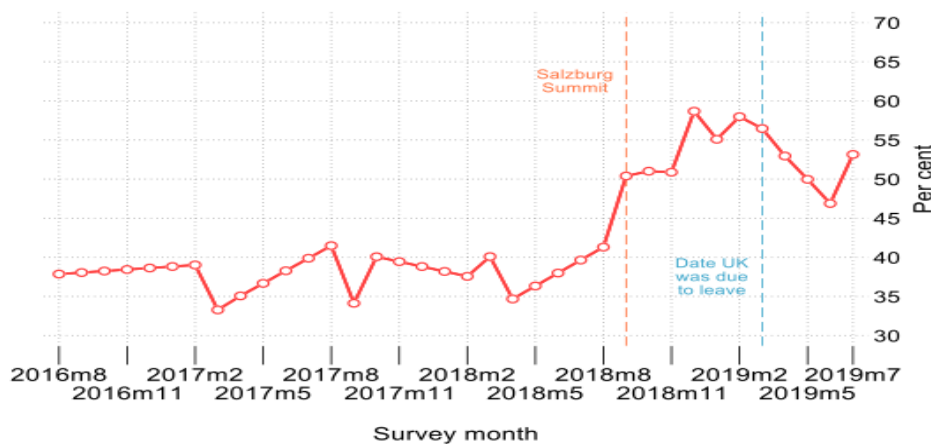
Exogenous inputs: TFPS, populations, profit tax rates

Economy	TFP	Population	Tax Rate
United Kingdom (UK)	100	100	26
European Union (EU)	83	698	23
Norway (NO)	175	8	28
Switzerland (CH)	163	13	21
United States (US)	117	493	40
Canada (CA)	117	54	28
Australia (AU)	115	35	30
New Zealand (NZ)	117	7	29
South Africa (ZA)	53	82	35
Japan (JP)	100	202	40
Korea (KR)	96	79	23
China (CN)	37	2136	21
India (IN)	21	1972	33

After Brexit, the UK has great potential to have a vibrant agricultural market that is beneficial for consumers. It is vital we promote a greater reliance on markets in the industry and reduce protectionism, but we must also be realistic about the impact of these changes on UK farmers. A gradual approach, coupled with direct payments that are more targeted to actual farmers – and not simply large landowners as is currently the case – would be a good starting point.The benefits of free trade are well established in all branches of economics and, contrary to popular belief, the opportunity for cheaper food imports benefit more than just consumers. Expounding free trade in the farming industry is essential in the long run to ensure that producers receive accurate price signals regarding what to produce. If they do not receive that information, then sooner or later they will have to adjust, and it will be more painful.

More controversial perhaps, is regulatory protectionism. The approach under current EU rules here may be less well known, but it is no less damaging. Protectionist rules, with no sound scientific basis, keep out affordable imports that could otherwise benefit the poorest in society. A classic example here is the much maligned 'chlorinated chicken'. As our paper makes clear, US poultry is in fact significantly safer than poultry reared and produced in the EU. Pathogen Reduction Treatments (which rarely include chlorine) are used to remove harmful bugs and parasites and have been found to be both safe and effective by the EU's own regulator in 2014 and 2019.

When the EU introduced a ban on battery cages for egg production, the result was not an increase in free range eggs, but the use of 'enriched cages' only slightly larger than the previous ones. Enforcement was also patchy, with both Italy and Greece referred to Court of Justice of the European Union for failing to comply. In contrast, US producers are increasingly switching to free-range production due to consumer pressure. McDonalds is going cage free in the US, and more than 60 other large food companies have pledged the same over the next decade.

Outside the EU, the UK should bear in mind that it is consumers who gain from reduced barriers to imports, and who are ultimately responsible for raising production standards. And the benefits of smarter regulation do not end there. The aggressive EU application of the precautionary principle prevents UK farmers from adopting innovations that could transform agriculture. Regulations banning genome-edited crops and GMOs risk seeing UK farmers left behind by more efficient global producers, and all of society paying a higher environmental cost. New crop strains, banned in the EU, have seen pesticide use in non-EU countries decline by over 35% in the last quarter century. Yields are up over 20%. The result of this transition is that more food can be grown using less land (a boon for conservation and the environment) and fewer harmful pesticides.

When the UK leaves the EU, we should look to lowering our tariff and non-tariff barriers and reforming our regulatory environment to allow farmers to innovate. Globally, the agricultural industry is changing, and we can no longer ignore or try to divert from this direction of travel.

UK contribution to the EU Budget

According to a 2019 analysis, the UK contributed £13 billion to the European Union budget. The net contribution amounted to around £8.5 billion each year. The decision to leave the EU can save the UK government from having to contribute every year. Different studies show different contribution figures. The chart below shows the predictions of the UK's contribution to the EU in the coming years.

Predicted UK contributions to EU Budget
Gross contribution minus rebate/£m
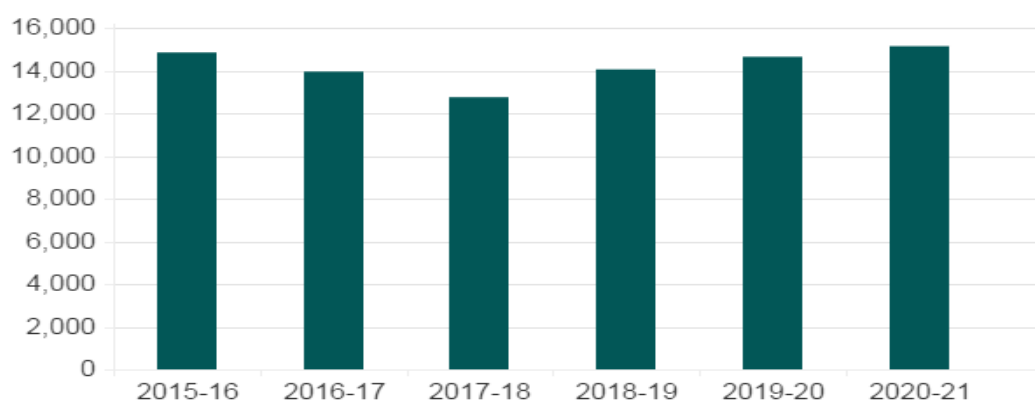
Source: OBR

B B C

Source: OBR & BBC

Benefits of Brexit to UK Businesses
Free to make trade agreements

Now that the UK has voted to leave the EU, it can make **business deals with countries around the world**, from scratch. Countries like China and Australia are already moving to make trade deals with the UK after Brexit. The UK is exploring multibillion-pound free trade deals with **China**. While China would benefit from having greater access to the UK's manufactured goods and investment, Brexit will further reduce barriers to the UK's service industries like banking and insurance, along with other UK goods.

Lesser regulations and obligations

Voting to leave the EU will give the UK the option of **not having to comply with EU regulations**. The UK will no longer be obliged to pay billions of pounds towards EU membership cost. As Britain had been a major contributor, it can spend all that money on its own growth.

Conclusion

There have been many arguments saying the UK has been burdened with regulations from the EU, costing them millions of pounds each week. From a business perspective, the UK will be free to trade and negotiate with other countries globally, on its own terms. There will also be numerous **employment prospects** from outside the EU.

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Micro-loans through a non-profit lens: mapping product and service delivery

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Abstract

Micro-finance is well-known in the developing world for aiding in poverty reduction. Access to micro-loans enables micro-entrepreneurs to build and expand on local businesses. Many organizations across North America are engaging in micro-finance activity and today, micro-loans are offered in a host of different organizational forms. In this case studied, the products and services are delivered through a non-profit organization.

This study analyzes micro-finance practices over a ten-year period at an institution offering micro-loans. From a comparative perspective, this paper highlights how the product and service offerings differ in a non-profit setting in comparison to a traditional micro-finance institutional setting. This study also provides recommendations for new and existing micro-loan programs within the non-profit sector.

Indicators of social problems: the spirit level, the society destroyed and healthcare role

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Keywords
Social problems, socio-cultural inequality, economic crisis, anthropological crisis

Abstract

We are facing an anthropological crisis, not economic. The debate on economics and its methods of study cannot be divorced from a correct reading of history that in the long term tends to repeat itself, as G.B. Vico had envisioned; the nature of man never changes, constantly oscillating between Cain and Abel, and it would seem that only pain leads man to wisdom. The single technical-rational thought makes us see the future as the only guarantee of success and we therefore cannot understand the correlations between causes and effects in our history. We act as if the past had been erased and as if history had never manifested similar situations to those in which we find ourselves today.

The toxic consequences of this model are socio-cultural inequality, poverty, moral degradation, a raging and permanent conflict, lack of imagination and creativity. Is all this due to an incorrect adjustment of the markets (economic crisis) or to the end of a socio-cultural model incapable of responding to the problems of man as a person not as an object (anthropological crisis)? "Once profit becomes the exclusive goal, if it is produced by improper means and without the common good as its ultimate end, it risks destroying wealth and creating poverty" (Caritas in veritate, chapter II, 21). The system taken to extremes created a concentration of financial wealth that is unparalleled in history with a sort of hegemonic senate that is superordinate to individual states. We have to return to the man and to a Welfare system in which healthcare is fundamental because in this way we can understand the solidarity and we can build a real "societas" – this world in old Latin means "alliance" – and this is a foundation of our happiness.

The solution to our problems is not to be found in mechanistic rules outside of society but in the manner and socio-cultural policies aimed at reorienting the value systems of social life to try to rebuild the by-now forgotten reciprocal sense of solidarity; a society can only move forwards if it is based on familism principles and not on a war of everyone against everyone. Economics, if taken as a moral value, has betrayed its original role as a mechanism to respond to human needs, but has become an end in itself and an instrument of cultural domination that has led society to face the dilemma of its becoming. The idea of justice represented by a society of equals has been overridden by a society of unequals and the time has come to think of our time and redesign it; this is the real and absolute challenge we are facing.

" E pluribus unum " (?) : the equality forgotten .

Those arriving in the United States through New York will be welcomed by the Statue of Liberty, a symbol of the values of independence and equality. The first immigrants came from countries where conditions for a decent life didn't exist and had faced long sea voyages, arriving in this new country without even a minimum knowledge of the language. A country that held the promise of a life in which everyone had the same opportunities, as represented by the Statue of Liberty with the torch of hope in her outstretched hand. The statue was donated by France and one of its designers was Gustave Eiffel, the famous engineer and designer of the tower named after him in Paris. The first foundation stone was laid on 5 August 1884 and engraved on a bronze plaque mounted inside the lower level of the pedestal was a sonnet entitled The New Colossus written by American poetess Emma Lazarus for the purpose of raising funds for the statue's construction.

'Give me your tired, your poor,
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore,
Send these, the homeless, tempest-tossed to me,
I lift my lamp beside the golden door!'

The migratory flow was abruptly interrupted after World War I when the United States realized that immigration could be dangerous because of remittances immigrants were making to their countries of origin. Two restrictive laws were passed in 1921 and 1924 and immigration fell drastically: Italian immigrants numbered almost 300,000 in 1914 and were about 4,000 in 1924.

Today the torch of universal values appears to have a rather uncertain flame and is unable to light the way for travellers in this age.

The evolution of the American cultural model clearly shows the correlation between social cohesion and economic health over the past century and up to the present day. Over time American society has swung back and forth between democracy and oligarchy – currently this latter form has got the upper hand. This has led to a society that, as Krugman says, has lost the ability to function as a democracy and is increasingly an expression of extreme social hardship, with the danger that the entire system will no longer be able to hold up.

Having said this, the philosophy underlying this economic and financial culture is an indisputable truth because what rules is the principle that it is the necessary and sufficient condition for a good society. So society becomes a dependent variable. In essence all that needs to be done is to adjust the economic-financial mechanisms in order to resolve problems caused by the crisis, with the result that social hardships will automatically disappear. However, this can only happen if one accepts the hypothesis that human nature has no effect on people's decisions. But then this brings us back to the basic error and so the problem thrown out of the door comes back in through the window and without beating around the bush presents the bill. Today America's social system makes the problem patently obvious – it can no longer be ignored. As the United States clearly shows, society is the foundation of the economy and that the features of its social crisis are inequality, unemployment, poverty and the consequent non-role assigned to the government. We will now try to review these points and then the indicators of social hardship – the spirit level.

Inequality in income redistribution : social and healthcare problems .The society collapses

This issue, already exhaustively covered in the preceding pages, is the consequence of the consolidated idea that the market – the magic of the market as Reagan defined it – is the cure for all ills. In the market our energy and creative spirit are free to express themselves – the laissez-faire theory expounded by French physiocrats – and leads to an optimum allocation of resources, because markets never make mistakes. Pursuing this policy has encouraged expectations of maximizing personal profit by systematically lowering taxation and continually restricting the government's role in the social system. The result has been a growing concentration of wealth as we can see :
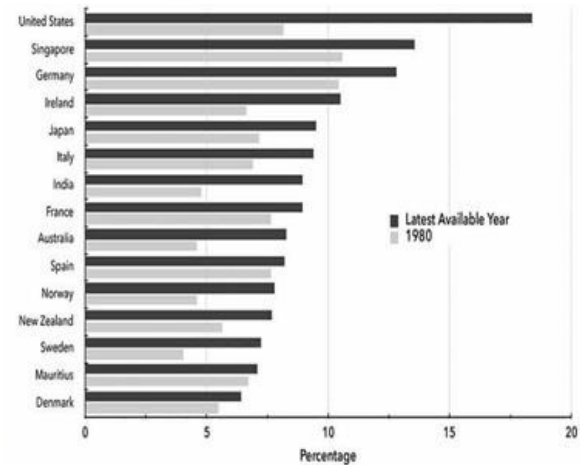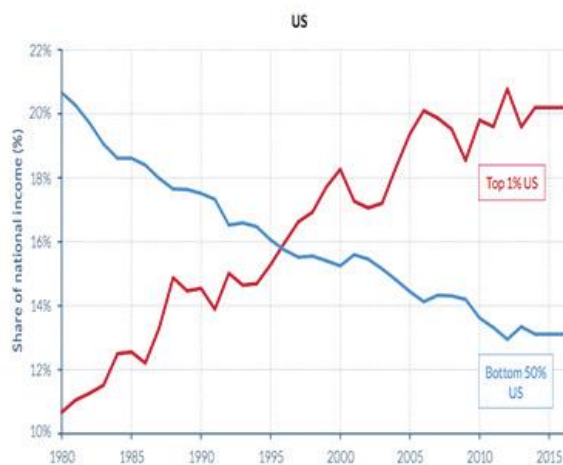
La Competizione Collaborativa highlighted the process under way and the attendant risks: 'The enormous growth of private capital and aim to continuously maximize it is moving further and further away from an allocation of wealth that recognizes the contribution other classes make to its formation. Their participation becomes increasingly instrumental with respect to the former [richest] class while satisfying the needs of others becomes more and more marginal. The superfluous wealth created for the richest class means the wealth of other classes is progressively eroded and so reduces their contribution to the sustainability of consumption, which ends up ruining everyone. This is the nemesis of human egoism and greed. If this is combined with a progressive concentration, the growth of wealth ends up having a negative utility for society and the economy itself, and the process becomes self-destructive: "the exclusive goal of profit, if it is badly produced and lacking the common good as its ultimate end, risks destroying wealth and creating poverty" (Pope Benedict XVI, Caritas in veritate, Chapter II, 21 quoted in La Competizione Collaborativa , Fabrizio Pezzani , 2011).

The concentration of wealth is fuelled by a progressive reduction in the highest tax band rate, so as wealth – the GDP – increases, taxation on the highest incomes falls and so favours a concentration of wealth in the hands of an ever-decreasing number of people, as can be seen in the following chart.

Figura 3.4 - Percentuale del reddito percepita dalla fascia più ricca della popolazione, 1913-2004

Fonte: T. Piketty - E. Saez, versione aggiornata di "Income Inequality in the United States, 1913-1998", in «Quarterly Journal of Economics», 113, n.1, febbraio 2003, con tavole e figure aggiornate al 2005 all'indirizzo <http://elsa.berkeley.edu/~saez/TabFig 2005prel.xls>

FIG. 3.1. Tasso di associazionismo medio calcolato su trentadue organizzazioni nazionali articolate in sezioni locali, 1900-97.

All the positive curves of the "golden age" have an inflection and deteriorated between 1971 and 1974 as a result of Nixon's decision; from the "gold exchange standard" we would go to the "petrodollar exchange standard" and to a system of flexible exchange rates .The separation of paper money from the real finite created two incompatible systems: the infinite and non-measurable of currency that would be totally deregulated, and the finite and measurable of the real world that became fictitiously subordinate to the former. Everything changes and the neoliberal model taken as an end justifies unlimited personal accumulation and the legitimisation of human aggression. Everything becomes finance and pure speculation in virtue of a paper currency that, detached from finite bonds and the real world, becomes infinite and would turn into "macro-usury" capable of keeping companies and entire countries in check. Infinite finance without constraints can be studied with exact mathematical models generating the false idea that financial markets are rational and never err in the allocation of wealth. The study of finance-economics severs the ties with the humanistic sciences, becoming a pure arithmetic calculation far from reality but assumed as incontrovertible truth thanks to the many Nobel prizes assigned to economics, unfounded but serving higher interests.

The drama of uncontrolled finance, as we see in following graphs :
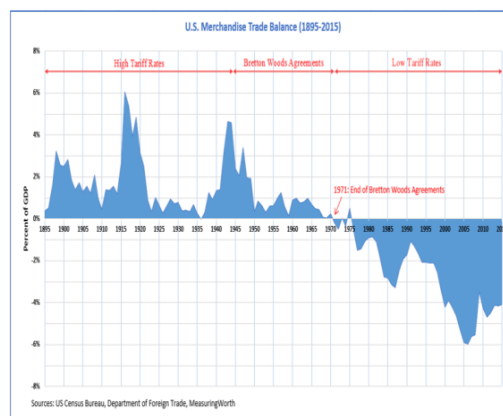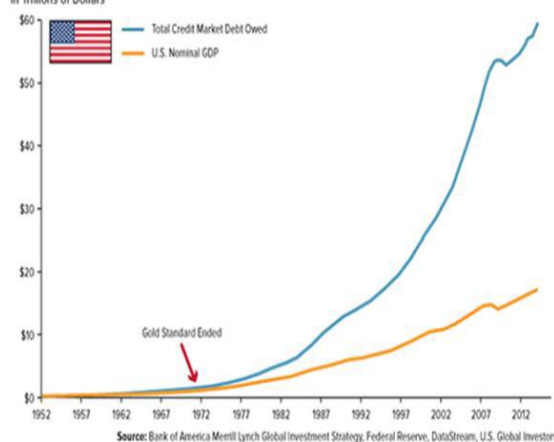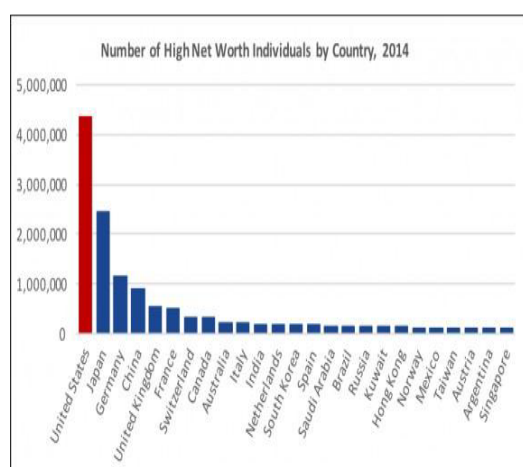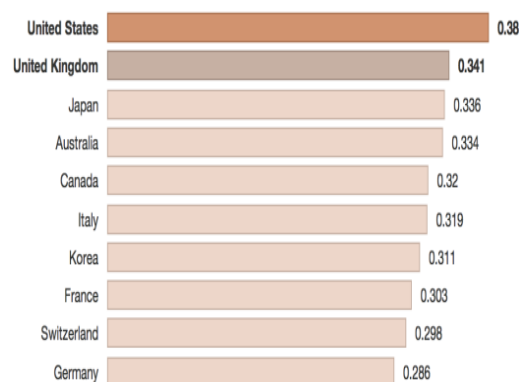
This increase in wealth accompanied by its progressive concentration results in a negative utility because it subtracts necessary resources from the middle class, which uses them to sustain the system, and transfers resources to those who use them for superfluous needs.

Unemployment

Failure to redistribute wealth also has an effect on employment levels. This is particularly significant in the USA as regards the decrease in manufacturing sector employment, which has been sacrificed on the altar of "financialization" of the real economy as explained in detail previously.

The figures for this change are simply amazing. Manufacturing, which was always the core sector of the American economy, now accounts for less than 14% of the employed. This drop in jobs has been generated by externalization policies to "create value for shareholders" (only for very few of them, however). The difference between the American doctrine of business management and the Italian discipline of business administration is evident from criteria defining a company's mission. In the Italian sense the mission must refer to all stakeholders in the company, that is, those providing capital and those contributing labour. This also serves to explain the different attention paid to social systems and subsidiarity, which are a mark of Italian and other European enterprises.

Employment in the US manufacturing sector rose to 19.4 million jobs in 1979 but by 2009 had fallen to almost 12 million. But even more significant is the trend seen during the finance era, because the real collapse was seen in the decade leading up to 2009, when the total workforce dropped by 31%, a loss of over 5 million jobs. The financial crisis had an extremely negative impact on the manufacturing sector, with a loss of over two million jobs between the end of 2007 and 2009. The impact of delocalization policies has created jobs in other economies, in fact about 17% – one out of six of the lost jobs – was caused by this. Employment in the agricultural sector today stands at around 2% of the country's total workforce compared to 40% at the beginning of the last century. This decrease is in line with a process of industrial conversion. At global level the manufacturing sector's percentage contribution to added value between 2000 and 2010 shows a drop in American industry's contribution in favour of emerging countries , specially China which will became the factory of the world :

U.S. Employment in Manufacturing Industries
Thousands of Jobs, 1980-2014

Source: Brookings Analysis of Moody's Analytics Data

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Unemployment Rate - Official (U-3 & U-6) vs ShadowStats Alternate
Monthly SA. Through Oct. 2019 (ShadowStats, BLS)

— Official (U3)　— Broadest (U6)　— ShadowStats
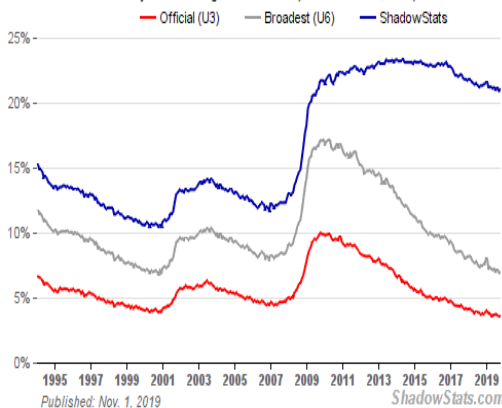
Published: Nov. 1, 2019　　　　　　ShadowStats.com

Repubblica popolare del prodotto interno lordo nominale della Cina
(PIL) Dal 1952-2000

Share of Workers Employed in Agriculture, Forestry, and Fishing Industries,
NC v. US, 1860-2010

81% in 1880

53% in 1870

2.5% in 2010
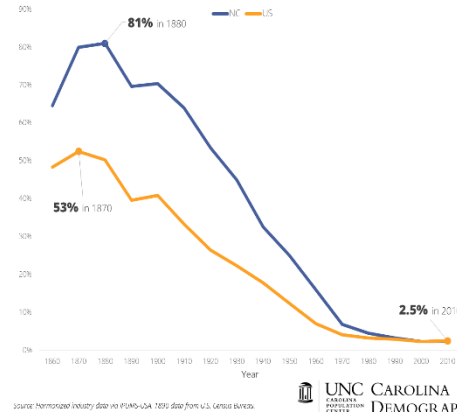
Source: Harmonized industry data via IPUMS-USA. 1890 data from U.S. Census Bureau.

UNC CAROLINA
DEMOGRAPHY

Unemployment in a key sector of the economy , agriculture and manufacturing , is always a danger signal because it takes a long time to rebuild and relaunch the real economy. It is no use thinking that delocalized jobs can be brought back because they have been targeted for local manpower with certain characteristics that has specialized in that work, and so economies of scale and experience have been acquired that are difficult to imitate.

On the other hand, given that much of manufacturing production has been transferred abroad, the USA has become dependent on imports. And so when the mass of money injected into the market will tend to devalue, internal prices will rise with the result that real consumption will collapse. But also the standard of living for the majority of Americans, which Reagan and Bush maintained would never be an issue, will decrease drastically and the US will be hit by a very severe financial crisis. Recovery policies in the sector seem to be focused on the green economy – opposed by the very powerful oil lobby – and hi-tech industries. Innovation and advanced technology can make the US manufacturing sector more competitive and less easy to imitate by other economies, which will continue to be left with the less lucrative parts of the production chain. The key issue is, however, the level of professional qualifications required for the possible new jobs and so the heart of the problem is how to up the level of a society that has been left behind or, more correctly, alienated from the system.

The problem of employment is much greater than the official rate of unemployment would indicate. The official figure doesn't include the underemployed, the rate for this category is about 15% and those who have abandoned all hope of finding a job. The total of the three categories is

almost 25%; however, the greatest concern is the number of young graduates who cannot find a job they are qualified for and so are forced to fall back on low-skill jobs that don't require a degree. The total debt incurred by these youngsters to obtain their degrees amounts to something like 1,500 billion dollars, but their earnings from low-paid jobs mean they are unable to repay the loans concerned. Social hardship resulting from such a situation, bearing in mind the length of time required to find a solution, must be tackled so as to avoid a significant misalignment in terms of response time with conflicts that may well emerge, otherwise these will end up by presenting the system with the bill. Social hardship has also caused the education sector to come unstuck, which given the new development policies becomes a critical factor for their success. Quality of education and reversing the rate of school drop-outs, which reduces the level of qualified future manpower, becomes a critical issue in states where there is more inequality

Poverty

Lastly, poverty becomes a natural consequence of the factors indicated above and together make an explosive mix. Data are a really serious concern both as regards the number of people already living in poverty and the trend towards it that shows no sign of slowing down.

A large number of US citizens are poor. In 2010 about 46.2 million Americans lived in poverty – 15.1% of the entire population – and the trend is increasing, considering that those living in poverty rose by 27% in three years whereas in the same period the total population only grew by 3%.

Figure 1: Children under 6 years old by family income, 2013
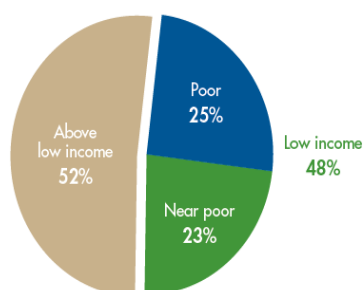
© National Center for Children in Poverty (www.nccp.org)
Basic Facts about Low-Income Children: Children under 6 Years, 2013

Poverty Rates for Certain Groups
New Hampshire Populations with Incomes Under 100 Percent of the Poverty Threshold
Source: American Community Survey, 2016 One-Year Data

Source: Author calculations using U.S. Department of Housing and Urban Development and U.S. Census Bureau data.

Number of unsheltered homeless people in England
Estimated number of unsheltered homeless people in England. Figures correspond to 'point-in-time' estimates obtained by counting 'rough sleepers' in autumn.
Source: Rough Sleeping in England in the 2010s - OWID based on UK National Statistics (2018) OurWorldInData.org/homelessness • CC BY-SA

Those who have fared worse are the Spanish immigrants and Afro-Americans, especially the young and also single mothers. For the first time in history over 40 million people rely on monthly government aid, one American in eight benefits from food support, while one youngster in five is a

street kid. In the 2007-2008 UN report on poverty, the USA is ranked last among industrialized countries, as already seen in inequality indicators.

The dramatic nature and rapid growth of this social hardship is very damning. It is also in complete contrast with the image of democracy and equality that the country has always tried to give. So it is important that a policy to re-establish values be pursued, not only for the good of the USA but for the entire world.

Unfortunately, given the current trend poverty levels will continue to increase because these are linked to the other trends mentioned above and objective limits affecting any government action, some structural and others posed by a political rival incapable of seeing reality and only concerned with defending its own privileges. The poverty issue touches on an aspect that is not easily measurable, linked to illegal immigration and the number of irregulars who fuel the black market for labour. The sense of poverty increases if society legitimates models of happiness and wellbeing associated with owning goods, often unnecessary items but that are status symbols, so much so that buying them becomes vital. To have changed the scale of needs towards those that are more unnecessary is functional to support a consumer society, however, it creates a painful dependence in those who are unable to satisfy them. It was Xenophon's Socrates who said that the primary virtue is enkrateia, that is, control and limitation of physical pleasures. Socrates speaks of a correlation between justice and moderation of desires and sustains that this virtue is the necessary condition to have sincere friendships and participate in social life in a constructive manner. In this sense, responding to those who remarked on his poverty he said that wealth and poverty didn't only depend on the amount of money one has but on the limitation of needs.

Further development of today's social model will increase the sense of poverty beyond the current level, which is already difficult to tolerate. A model that will become more insensitive towards those who need to be relieved from pain, one that will make a sense of solidarity difficult in similar disaster situations and exacerbate conflicts that will be difficult to heal. The consequences of the US social model not only makes problems worse, it also seriously delays any action to find solutions.

The spirit level

Social hardships grow and this can be seen by the increase in social problems and tensions highlighted by the indicators. An excellent book by Richard Wilkinson and Kate Pickett, The Spirit Level: Why Greater Equality Makes Societies Stronger, highlights how increases in inequality tend to cause social problems to grow and later explode. The indicators serve to better understand empirically theories propounded in this book and in La Competizione Collaborativa. (Fabrizio Pezzani , 2011 , Egea , Milan) The first point made in Wilkinson and Pickett's book is that:

'Not only have measures of wellbeing and happiness ceased to rise with economic growth but, as affluent societies have grown richer, there have been long-term rises in rates of anxiety, depression and numerous other social problems […] As living standards rise and countries get richer and richer, the relationship between economic growth and life expectancy weakens. […] Sooner or later in the long history of economic growth, countries inevitably reach a level of affluence where "diminishing returns" set in and additional income buys less and less additional health, happiness and wellbeing. […] It is the diseases of poverty which first decline as countries start to get richer. The great infectious diseases […] – disappear, we are left with the so-called diseases of affluence – the degenerative cardiovascular diseases and cancers. While the infectious diseases of poverty are particularly common in childhood and frequently kill even in the prime of life, the diseases of affluence are very largely diseases of later life'. (The Spirit Level: Why Greater Equality Makes Societies Stronger)

The imbalance between economic value and social value, normally referred to as "beyond GDP", has been a line of research for some time now. French president, Sarkozy set up a committee comprising, among others, Stiglitz, Sen and Fitoussi to investigate this issue. Research that Robert

Kennedy had been the first to call for in his 1968 election campaign, given that he realized the economic indicator was inadequate to represent the wellbeing of society and, in a more general sense, happiness. But measurement of wellbeing in a broader sense than merely considering economic aspects is no easy matter, because first the concepts of both wellbeing itself and happiness need to be defined. To do so means that the sphere of feelings, affection and love must be taken into account, aspects that are very difficult to define and measure. For instance, can a mother's love for her child be measured?

Certainly a life that is too dependent on material aspects will sooner or later inevitably provoke a reappraisal of the need for spirituality. Today this need is growing as a response to people's desire to overcome a sterile lifestyle based on individualism and greed, one that suffocates and annihilates the sense of social life. We will always have to start again from social capital and this can be done once the need has become widespread and interiorized. The inequality increases the sense of exclusion and isolation – remember that Cain was condemned to wander for ever alone. It also diminishes the feeling of mutual trust, the foundation of a united society – social capital cannot be built up without a sense of trust. And without trust there cannot even be hope. Inequality in a cultural model as indicated above increases problems like anxiety, fear, sense of isolation, loss of self-esteem and mistrust. It leads to forms of depression, the breakup of families and abandoning school or alternatively to forms of aggression and angry protest that foment violence and criminality. It generates compensatory reactions such as drug abuse or forms of satisfaction that are expressions of a regression to uncontrolled primary needs such as bulimia and exaggerated sexuality.

Already in his works at the end of the 1930s Sorokin warned of an upward drive in stratification of American society and how this was near to the threshold beyond which an increase in social differences tend to produce an irreversible process of disintegration. In his book Social and Cultural Dynamics Sorokin focused attention on the correlation between these forms of social hardship and the level of inequality as regards income redistribution. The negative effects of inequality must also be attributed to each country's history, its tradition for solidarity and scale of values, which become antidotes to these problems. Rural communities in Italy have always had a strong sense of solidarity and loathed behaviour contrary to a widely held sense of moral values. And so even when faced with extremely harsh economic conditions the sense of solidarity and respect for moral norms condemned any behaviour detrimental to this status quo. The existence of a strong, mutually agreed social capital acted as a considerable deterrent against social developments that failed to comply with this interior order.

Another element that has contributed to the breakup of American society, which is also becoming a problem in Italy, is linked to the decline of the family's role in society. The drive towards an individualistic model in search of material happiness has led to a reduction in forms of bonds with others – marriage is an immediate example – but this eventually leads to an isolation that promotes confusion and a difficulty to identify with stable values. Such difficulties mainly affect the more vulnerable, weaker youngsters, who end up without any guidance and rapidly succumb to the negative lessons of street life: in 2011 one in five youngsters were victims of this.

The following charts highlight problems related to the inequality indicated above. Use of illegal drugs increases crime and infant mortality in the USA is much higher than in all European countries :

Chart 2.6 - Infant mortality in rich countries is related to inequality
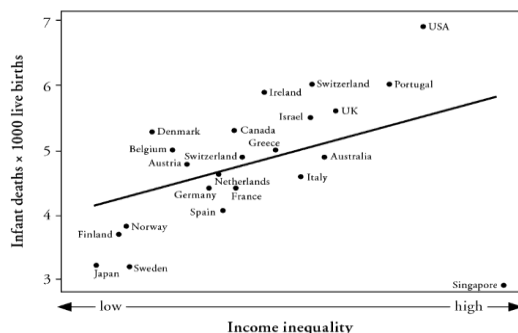
Source: R. Wilkinson and K. Pickett, 2009

Infant Mortality Rate (2010)
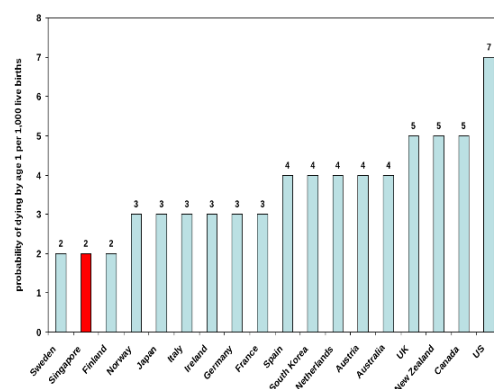
The trend is somewhat similar to that seen in Italy where infant mortality is greater in areas where inequality is higher. The rate of teenage pregnancy, especially for minors, is a telling expression of a society that has failed to preserve the family bond. Abandoning school and the breakdown of family ties becomes a factor of high social instability that then becomes difficult to contain. In the same way the degree of obesity in young people is a response to frustration with a society that fails to provide guidance, with the result, as mentioned, of a return to primary needs. Other problems that affect the young are states of anxiety, insomnia, various fears and forms of anorexia or drug assumption :

Chart 2.7 - Rate of teenage pregnancies in relation to family income, from the richest to the poorest families
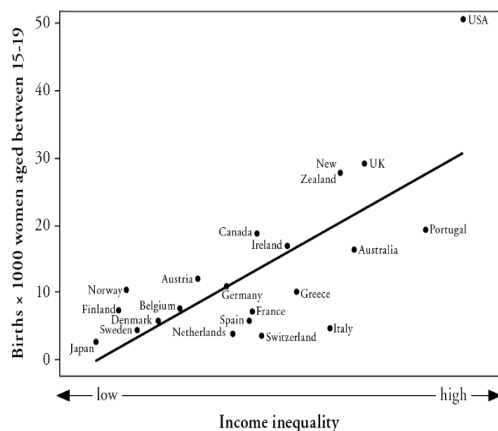
Source: R. Wilkinson and K. Pickett, 2009

Chart 2.8 - The percentage of overweight children is higher in countries with greater inequality
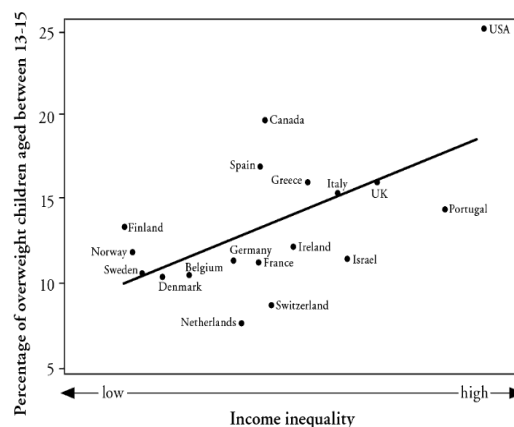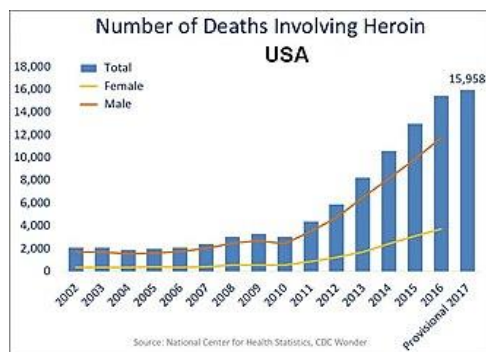
Source: R. Wilkinson and K. Pickett, 2009

Number of Deaths Involving Heroin USA

Chart 2.9 - Murder is more frequent in countries with greater inequality
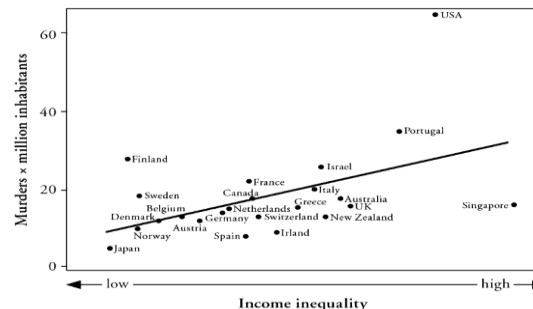
Source: R. Wilkinson and K. Pickett, 2009

Figure 2. National Drug Overdose Deaths Number Among All Ages, 1999-2017
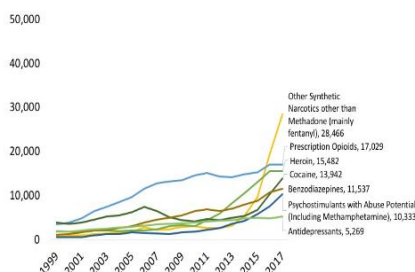
Synthetic opiate deaths continue to surge
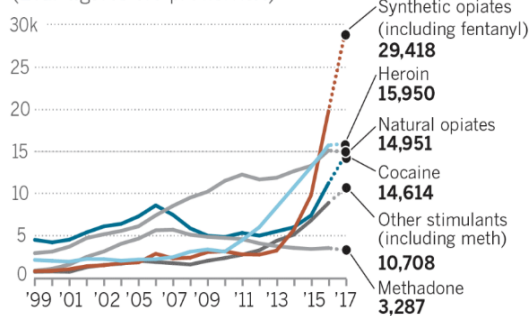
• One of the natural consequence of social hardship and subsequent conflicts is violent crime: in the United States the rate is twice as high as the next ranked country.

Chart 2.9 - Murder is more frequent in countries with greater inequality
Source: R. Wilkinson and K. Pickett, 2009
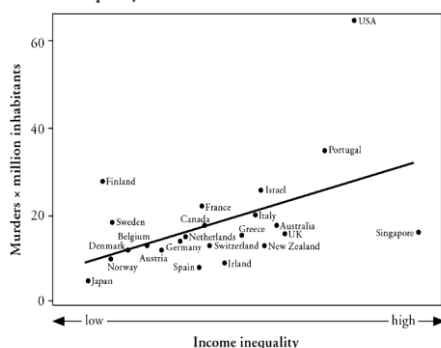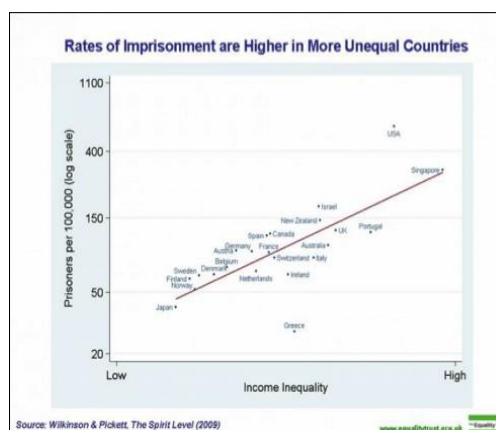
Rates of Imprisonment are Higher in More Unequal Countries
Source: Wilkinson & Pickett, The Spirit Level (2009)

Social expenditures as a percentage of GDP and child poverty in the OECD
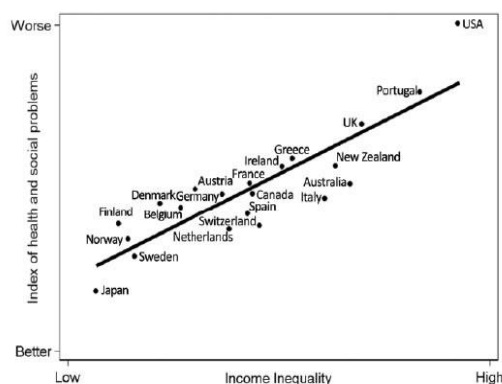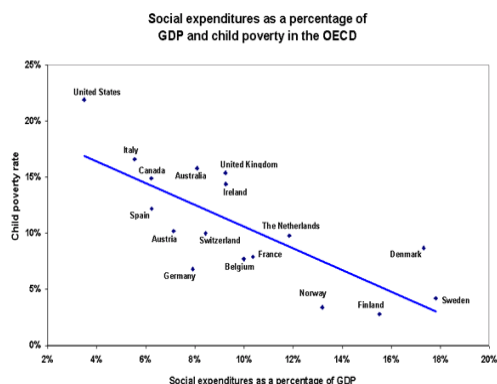
Crime is also in part determined by the stance taken by police officers, who on many occasions behave violently even when it is absolutely unjustified. Fear acts a strong deterrent when faced with rebellion because the oppressed are always afraid of losing what little they have .Social frustration and a sense of being abandoned induce forms of blind rage and violence that, fuelled by a culture founded on personal justice, leaves the door open for acts of vandalism and mass murder, which tend to become more and more frequent, also thanks to an uncontrolled use of firearms.

Lastly, a really disastrous result is low social mobility, the natural consequence in a society where classes with a higher standard of living have advantages that are effectively denied to others. This is a sure sign that the American dream has now fade

Chart 2.10 - Social mobility is lowest in countries with the greatest inequality

Source: R. Wilkinson and K. Pickett, 2009

FIGURE 1
The Great Gatsby Curve
More inequality is associated with less mobility across the generations

Source: Miles Corak, "Inequality from Generation to Generation: The United States in Comparison." In Robert Rycroft, ed. The Economics of Inequality, Poverty, and Discrimination in the 21st Century (Santa Barbara, California: ABC-CLIO, 2013).
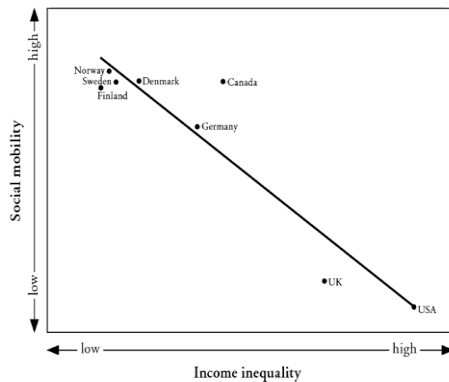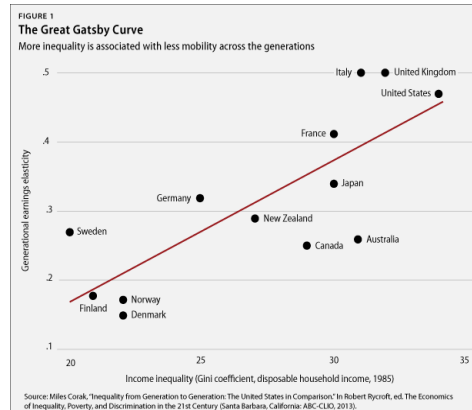
In essence it seems evident that the crisis is a failure of a social and cultural model taken to the extreme and that reconstruction of the country must start again by reappraising the values expressed by the founding fathers. Values based on inclusion and not exclusion of the people that, over time in the mind of those responsible for government, have become nothing more than dim memories. All of this has produced a "nihilism" that is not easy to overcome, but as history teaches us, without mutual trust and hope there is no way out.

The dramatic Contradiction : Expenditures in healthcare are totally asymmetricals to social and right society :

Health expenditure as a share of GDP, OECD countries, 2010

Conclusions

The time has come to understand that we are facing an anthropological and not economic crisis as it is reductively defined; it is the failure of a socio-cultural model that has erased the fundamental human rights inscribed in 1948. The response to the crisis as anthropological is in understanding the cultural and historical path that has brought us to chaos, overthrowing the dominant paradigm, to place man and society at the centre of our interests as an end and to bring economics back to its natural role as a means. The technical culture, master of the world has unnaturally transformed economics as a social science into an exact science; in the exact sciences we study the relationships between measurable things to define universal laws, but in the social sciences, such as economics, we study relationships between men where human subjectivity does not allow defining universal laws.

It is time for people to realize what happens to a society when it fails to invest in social relations and the need imposed by history to again make social capital the focus of our interests. We must understand that social capital cannot be replaced by economic capital. A good society is always the precondition for growth of economic values and empirical evidence would seem to confirm this thesis.

But the question is whether we will manage in time to dominate this current, limitless greed and aggressiveness in favour of a greater focus on a sense of fraternity and solidarity expressed by love for others. Homo sapiens really does seem to be rather stubborn as regards understanding its own errors. A species that seems to be very attentive as regards learning the causes and effects of physical ills but that has not yet managed to correlate causes and effects in its history. Conceptually, similar situations to those we find ourselves having to face today have occurred before. Perhaps this explains why history is ignored, as if by doing so erects a kind of barrier to the fear of having to face suffering. Whether Homo sapiens will manage to deserve this appellation is difficult to say, time will tell if intelligence will turn out to be a benefit or a curse. Should it turn out to be a curse, this will only be because of a failure to use a truly precious gift, namely, our "humanity", in an intelligent way.

The past few centuries have seen revolutions, wars and other tragic events that have ended, even in recent times, with solemn declarations of peace and democracy. But unfortunately, in the brief course of one generation they seem to disappear. And so, the history of progress of civilizations continues on a course filled with doubts. Answers to the needs of an increasingly global society represented by a culture that relies on a single philosophy – technical knowledge as an end in itself – is showing it has reached the end of the line with the collapse of society and the very essence of humanity.

America is the most grandiose experiment the world has seen, but, I am afraid, it is not going to be a success.

Sigmund Freud
Austrian neurologist
1856 - 1939
QuoteHD.com
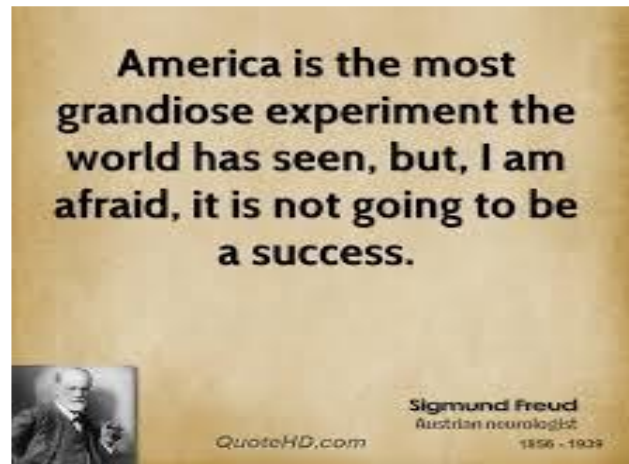
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A discourse on how people should be treated at workplaces
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KiLax, UK

Keywords
Deontology, utilitarianism, categorical imperative, social contract theory

Abstract
How our workplaces must regard the employees' nature, needs, value and their approach to work? All these create a complex interwoven of people beliefs and assumptions about them. Organisations always struggle to arrive at a ''rationale basis'' of how people must be treated in every aspect of human resource development practices, which involve their selection, training and development, appraisal and reward, compensation and welfare measure, health and safety, performance management, etc. An inquiry into such a ''rationale basis'' may appear to be more evasive and equivocal particularly when organisations are in an indeterminate state during hostile takeover, mergers and acquisitions, succession planning, industrial dispute affecting labor relations, diversity and inclusion, or under any kind of transformational changes or existential threat. This rationale basis may underpin Kantian deontological ethics or a utilitarian perspective denoting consequentialism.

The research paper will speculate how the concept of duty within an organisation is created that forms the Kantian basis for an ethical law -- good will as a single moral principle which freely chooses to use the other virtues for moral ends. The discourse leads to the task of applying the Kantian categorical imperative -- duties arise because failure to fulfil them would either result in a contradiction in conception or in a contradiction in the will (perfect versus imperfect duty). Also, can the organisation be regarded as a quasi-nation state, thus it can be adduced to ''social contract'' arguments positing that employees have consented, either explicitly or tacitly, to surrender some of their freedoms and submit to the authority of organization (board or management or keystakeholders) in exchange for protection of their remaining rights or maintenance of the social order within the organisation.

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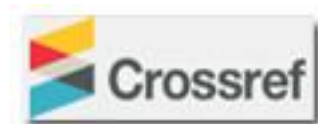
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