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## **CBER 7<sup>th</sup> International Conference on Globalisation, Entrepreneurship and Emerging Economies (ICGEEE), 10-11 December 2022**

11-11 December 2022

Hosted by the  
*Centre for Business & Economic Research (CBER), UK*  
*In association with*  
*Journal of Business and Retail Management Research (JBRMR)*  
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# Women Entrepreneurs in the Film Industry: Obstacles, Challenges, and Opportunities

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## Keywords

Women Entrepreneurs, Film Industry, Racial Minorities, Indigenous

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## Abstract

*This paper does a review of the literature that exists for women entrepreneurs in the film industry and includes a look at some major statistical revelations. It does this primarily through a literature review and research on the major articles on women entrepreneurs in the film industry as well as researching industry data from key statistical sources. The findings indicate that women entrepreneurs in the film industry are at a great disadvantage compared to their male counterparts and that this is especially potent for minority women entrepreneurs in the film industry. In order to overcome these deficiencies women entrepreneurs in the film industry have to create network structures that are relevant and reliable and include those both inside and outside the film industry, those in the financial industry and those willing to train and educate the women entrepreneurs on the nuances of the said film industry.*

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## Introduction

Many industries continue to grapple with their disadvantaged treatment of women and minorities into the twenty-first century. Some of these industries are heavily skewed by gender, with women often seen as participating in minuscule or peripheral ways in said industries. Such industries include engineering, mining, and construction as well as other fields such as financing or manufacturing (Smith-Hunter, 2006). One area that has received scant perusal is the film industry, especially as it relates to entrepreneurship, women entrepreneurship and in particular minority women's entrepreneurship (Henry et al, 2018; Karniouchina et al (2022). The status quo has been to accept women in the film industry in more subservient roles, where they are actresses or engaged in administrative or clerical work. Women as directors, producers, and operating in positions where they are entrepreneurial and write, produce or direct their films are often dismissed, ignored and definitely not often rewarded. This paper takes a major step to rectify this position, by first presenting the literature that currently exists on women entrepreneurs in the film industry, highlighting the key studies, which is definitely dastardly low. This is followed by a look at the statistics that exist on women entrepreneurs in the film industry. This paper's focus thus answered and highlighted initial views of the industry and provided a solid starting point for more in-depth follow-up analyses. The paper ended with a discussion of the obstacles and opportunities that exist for women entrepreneurs in the film industry.

A recent study completed by Alicia Jessop in 2022 provided great insight into the screen industry and does so with rigorous statistical figures. It contributed first-hand primary data from the women entrepreneurs operating at the front lines of the screen industry. The study began with a look at screen industry, then continued with a look at factors related to financing, looking at it from three distinct perspectives: the methods of securing funding in the screen industry; drivers of funding for screen industry entrepreneurial endeavors; and inhibitors to funding for screen industry businesses for women entrepreneurs (Jessop, 2022). The paper ends with a look at motivators and barriers to starting screen industry businesses for women in the industry (Jessop, 2022).

One prominent question that dominates and echoes loudly as one thinks of women entrepreneurs in the film industry is this - why is there such a large divide between male and female entrepreneurs in the industry? The answer to this question, Jessop (2002) concluded, was best answered by homing in on the financial arena. Jessop (2022) concluded that only 18.6% of studio-subsidized film deals and 35.7% of studio-subsidized television deals were with women-owned companies and only 18% of production companies with non-studio funding were women-owned. By comparison, Jessop (2022) found that on

average men-owned independent production companies received more than seven times the amount of funding received by women-owned independent production companies. This current paper provides a look at how to alleviate the funding issues that serve as a barrier to entrepreneurs entering and advancing in this industry. In so doing, it serves as an important step in reversing women's entrepreneurial position in this sector.

### **Background and Literature Review**

What then of the literature in the area of women entrepreneurs in the film industry? What does it reveal? Karniouchina et al (2022) very recently discussed said issues and noted that representation issues for women in Hollywood are coming under intense scrutiny in recent years, with the movie industry wrestling with gender- and race-related imbalances in its power structure and among those who are owners or entrepreneurs in this industry. One could argue that this increased focus is long overdue, since women entrepreneurs in the film industry as a recent phenomenon is inaccurate. The focus on the limited representation of women entrepreneurs in the movie industry was done convincingly two decades ago, when Mahar (2001) noted that women flourished as producers, directors, screenwriters, and editors in the first quarter-century of the 1900s. The author further found however that by 1925 their presence in all but the screenwriting arena, was severely diminished (Mahar, 2001). The argument in that research paper is that the process of gendering the industry ultimately closed studio doors to female filmmakers (Mahar, 2001). As studios moved from the artistic and entrepreneurial stage, a move that was counter-conducive to the perceived qualities of women, the needs of the industry became masculinized and women were excluded (Mahar, 2001). The author ends by making the argument that it wasn't necessarily the fitness, that is, the qualifications of women in that line of work that led to their dismissal, instead their dismissal came down to financial issues that saw big studios with large budgets dominating and women entrepreneurs who lacked that support were unceremoniously sidelined (Mahar, 2001). This theme of financial support and its importance to women entrepreneurs in the film industry, will be revisited again and again as a thread throughout the literature review that follows.

Another study that looked at women entrepreneurs in the film industry was completed by Karniouchina et al (2022). These authors' main area of concern was film directors and they saw it as an area of continued concern with the small proportion of women and people of color who were retained as film directors, coupled with little evidence of improvement in representation among widely released U.S. movies over time (Karniouchina et al, 2022). The authors examined factors that explained gender-related and race-related performance disparities in the movie industry. They employed a two-stage model analysis that accounted for the effects of selection in matching directors' gender and race to (1) projects of varying potential, (2) production budgets, and (3) the number of screens secured during distribution (Karniouchina et al (2022)). The authors used instrumental variables for revenue, budget, screens, and audience reviews and found that once endogeneity and selection are captured by the models, gender- and race-based performance differences disappear (Karniouchina et al (2022)). Their results showed evidence of biases favoring male, nonminority directors in a project assignment, budgeting, and distribution (Karniouchina et al (2022)). These biases were stronger for movies with female and minority lead actors but weaker for directors with high clout and international directors (Karniouchina et al, 2022). A matched-sample analysis illustrated that women directors produce similar outcomes with lower budgets and that minority directors produce outsized revenues with equivalent budgets (Karniouchina et al (2022)).

A most welcome study by Henry et al (2018) examined how factors from Indigenous entrepreneurship research (social capital, cultural capital, self-efficacy) helped explain the relatively high level of Māori entrepreneurial performance in the mainstream screen industry. The authors used results based on ten case studies and a one-year series of structured interviews, extending prior research by showing that these Indigenous entrepreneurs benefitted jointly from two forms of capital: cultural and social (Henry et al, 2018). The linkages between financial capital and cultural and social capital or network structures have been made convincingly before by Smith-Hunter (2006). In the case of the Indigenous study, the researchers found high levels of both forms of the latter capital, increased the desire for emancipation of cultural and community identity - not just individual identity - through entrepreneurship (Henry et al, 2018). The research shed new light on how Indigenous ventures can pursue

mainstream entrepreneurship while maintaining cultural identity (Henry et al, 2018). The idea of women profitably pursuing entrepreneurial ventures in the film industry while staying true to their interests and beliefs could serve as a blueprint for women entrepreneurs in the film industry. As Henry et al (2018) implied, pursuing entrepreneurship in the film industry by minority groups is a legitimate currency to preserve their voices.

### Research Methodology

The current study looked at women entrepreneurs in the film industry. The study represents a first step in gaining knowledge on what is available in that subject area in terms of the current literature and statistics. To that end, a thorough literature review was done and the most relevant and timely articles were summarized to provide a meaningful synopsis of where the research stands in this area today, as well as some key findings and what could next be done in terms of a follow up research agenda or analysis. As such, this paper used secondary data analysis to review the relevant literature and statistics that is currently available on women entrepreneurs in the film industry. The preceding serves as the best way to answer what research has been done, what are the key findings and what follow up research could be done as next steps? Thus the research question of what information currently exists and what additional research could be done is clearly answered through the use of this methodology.

### Statistics on Women Entrepreneurs in the Film Industry

A comprehensive study by Jessop (2022) provided some much-needed concrete statistical data on women entrepreneurs in the film industry. The report, titled “Women Entrepreneurs in the Screen Industries: Obstacles and Opportunities” and conducted by Pepperdine University associate professor Alicia Jessop, concludes that only 18.6% of studio-subsidized film deals and 35.7% of studio-subsidized television deals were with women-owned companies and only 18% of production companies with non-studio funding were women-owned (Jessop, 2022). Data was obtained from 114 quantitative surveys and 66 in-depth qualitative interviews of a sample including men and women, ranging in age from 25 to 74 years old, from a variety of races, and whose companies are based in the United States (Jessop, 2022).

Jessop’s (2022) research showed that women-owned production companies are in the minority when it comes to receiving studio subsidized deals, as well as independent financing from private investors, banks, or venture capital (Jessop, 2022). As of 2018, only 18.6% of studio-subsidized film deals and 35.7% of studio-subsidized television deals were inked with women-owned companies, and just 18% of production companies that received non-studio funding were women-owned (Jessop, 2022). In addition, the women-owned businesses that acquired non-studio-subsidized funding raised \$3.3 million on average, compared with the \$24.4 million their male counterparts received (Jessop, 2022). Despite the disparity, Jessop noted that because “women of color are facing the steepest barriers to entry in obtaining funding, that’s a huge opportunity for these companies and studios – who after George Floyd’s murder came out and positioned themselves to support Black Lives Matter, racial equality and equity – to examine whether women of color have the same opportunities” (Jessop, 2022).

Furthermore, Jessop’s most statistically significant findings dealt with financial literacy. The study found that women felt less confident than men in their ability to structure deals and compete for capital and were less assured in asking for the money they need (Jessop, 2022). Though this study didn’t ask *why* women felt that way, one could hypothesize that the uncertainty comes from seeing other women ask and then struggle to succeed. That suggestion is backed up by another surprising statistic: 0% of male entrepreneur interviewees self-indicated that parenting obligation presented a barrier to pursuing screen industry entrepreneurship, compared to 27.8% of female entrepreneur interviewees (Jessop, 2022). Since so much of the film industry is building on networking, the study suggested that networking methods preclude women from creating important male-female professional relationships and, therefore, restrict their access to funding and other business opportunities (Jessop, 2022).

The report also pinpointed the barriers to entry that feed the wide gender gap in screen industry funding. These barriers include lack of access to network relationships with investors; “unconscious, systemic, and organizational biases” that suggest women don’t have enough experience or success to warrant investment in their companies; and a lack of self-confidence among women themselves. “Gender-

based biases,” such as women often bearing the brunt of childcare duties, also contribute to the disparity in investment. Speaking directly Jessop stated that “this research shows that women are more ready, educated, and capable than ever to found and lead impactful screen industry businesses,” (Jessop, 2022). The author continued by stating that “however, significant barriers continue to foreclose paths to entrepreneurship for women in the screen industry. To optimally reach and engage all consumers, women must have equitable pathways to entrepreneurship as men” (Jessop, 2022).

An analysis of the gender breakdown of U.S.-based production companies found that women-owned production companies are in the minority when it comes to receiving studio subsidized deals and/or independent financing from private investors, banks, and venture capital firms (Jessop, 2022). Women-owned production companies received 18.6% of studio subsidized film deals and 35.7% of studio-sponsored television deals, as of 2018. Only 18.0% of independent production companies financed by non-studio funding from private investors, banks, venture capital firms, or personal funds, are women-owned (Jessop, 2022). The dismal awarding of funding to women-owned production companies showcases a prominent hurdle women face in pursuing screen industry entrepreneurship (Jessop, 2022). This hurdle is exacerbated by promotion practices in the industry that typically hold women out of top decision-making roles at studios (Jessop, 2022). One of the most glaring causes of the disparity is that only 18.6% of studio subsidized film deals and 35.7% of studio subsidized television deals were with women-owned companies in 2018 (Jessop, 2022).

A further look at the results outlined that only 18% of production companies with non-studio funding were women-owned. It further showed that women are not offered the same opportunities to start their businesses as men after their tenure in the studio or network jobs (Jessop, 2022). Men reported receiving studio deals or independent financing to start businesses after their studio or network tenures, whereas women did not report the same (Jessop, 2022). Industry hiring, promotion, and salary practices, coupled with dismal funding opportunities for women-owned screen industry businesses, create a dynamic where men typically pursue screen industry entrepreneurship because they want to, while women pursue screen industry entrepreneurship because they have to (Jessop, 2022). Fifty percent of the men interviewed pursued screen industry entrepreneurship primarily for the perceived business opportunity, compared to 11.1% of women interviewed (Jessop, 2022). In contrast, 38.9% of women interviewed pursued screen industry entrepreneurship primarily out of career necessity after losing a job, not obtaining a position they were qualified for, or not being compensated adequately (Jessop, 2022).

The 11.8% of men interviewed who pursued screen industry entrepreneurship primarily out of necessity did so when, mid-career and working in C-level executive roles at studios, they were not allowed to fully pursue their creative interests, unlike the majority of women interviewed for this study, these men were awarded significant financing to build companies (Jessop, 2022). While women reported recognizing and being motivated by the business opportunities entrepreneurship presents, the data above points to a critical finding of this research: women’s pursuit of screen industry entrepreneurship is thwarted because they do not receive the same funding—whether from studios or independent investors—that men obtained (Jessop, 2022). The current situation leads to a troubling and vicious cycle, in which women who pursue screen industry entrepreneurship encounter more significant barriers than their male counterparts and receive less support (Jessop, 2022). Not only do women not have as strong of networks as men to back them if they fail, but there are also few financiers or studio-based funders willing to float their independent or studio-based companies after the end of their for-hire role. This stands in stark contrast to men, who largely because of the benefits of their personal and professional networks, consistently shift from jobs-for-hire to owning their ventures backed by capital (Jessop, 2022).

Other findings of the study (Jessop, 2022) indicated the following - that barriers to screening industry entrepreneurship faced by women include:

- A lack of access to network relationships with individuals capable of offering or providing funding
- Unconscious, systemic, and organizational biases have resulted in a general assumption that women possess “less professional success and/or experience,” which is often the main prerequisite for investors looking to fund entrepreneurs

- A lack of self-confidence by women in their abilities to structure financing, compete for funding, and ask for the capital they need
- Gender-based biases, including parenting obligations, are disproportionately managed by women.

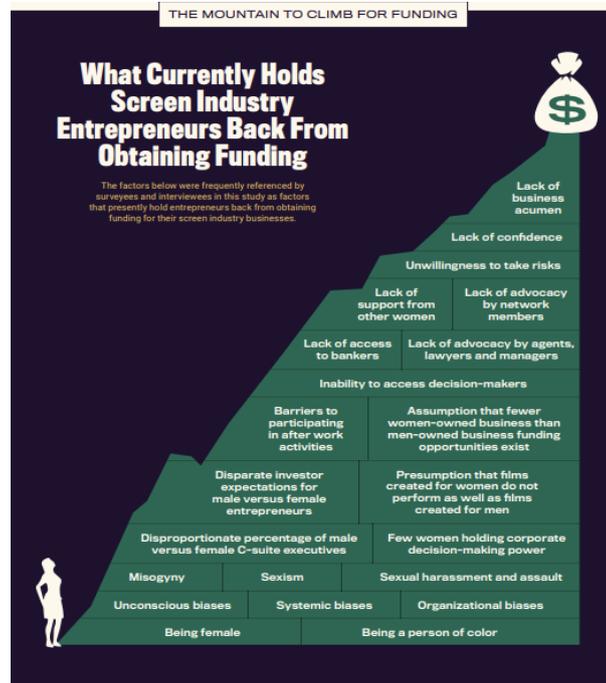


FIGURE 1 - Source: Women Entrepreneurs in the Screen Industry: Obstacles and Opportunities (Jessop, 2022)

### Discussion and Research Implications

The findings demonstrate that women entrepreneurs in the film industry are at a severe disadvantage. These disadvantages occur in the human capital, social capital and financial capital areas. For human capital, there is a need for the women entrepreneurs in film to become as knowledgeable as possible about the business and industry from as early as possible. This can be done through high school, college or post college internships and work experiences. This can also be done by taking as many relevant courses and classes as possible on the industry in general and on specific areas in the industry. This human capital should definitely include knowledge on the financing nuances relevant to and in the film industry.

For social capital or network structures, the women entrepreneurs in the film industry need to build network structures, starting early on that are comprehensive and include necessary parties. More specifically, such network structures should include financially knowledgeable individuals who can also access the women entrepreneurs to obtain access to financing. It should also include networks that allow others to act as mentors, confidants and support structures. As such, these networks need to be extensive and very diverse in terms of the relevant and needed areas that are covered and included. These network structures should not be seen as one sided - meaning that the women entrepreneurs are only being helped by the other individuals or organizations in their network structures. Instead the women entrepreneurs should also contribute or return the favor so to speak by also providing services and assistance to those who are in turn assisting them or providing services to them. Some solid network structure advice would be to: join organizations that assist women; join organizations that assist women business owners; collaborate with other women or other business owners that can guide, assist and lend overall support to your business and map out in great detail what help you need with your business, so that others can help you.

What then are the research implications of the current paper - beyond the above three recommendations that women entrepreneurs in the film industry expand their human capital, social

capital and financial capital resolutions. There is a need to do research on women entrepreneurs in the film industry that looks at minority women entrepreneurs in the film industry. There is also a need to look at women entrepreneurs in the film industry across geographic areas. A related question to the latter point is this - do women entrepreneurs in the film industry experience the same challenges or do these challenges differ in different countries? Most importantly there needs to be heavy duty research on where women entrepreneurs in the film industry can obtain financial capital.

### Conclusion and Limitations

The current paper is significant, as it highlights the current circumstances of women entrepreneurs in the film industry and lays the groundwork for solid recommendations to improve their positions. First, it provides an integrative theoretic review. The literature on women entrepreneurs in the film industry highlights three key studies that do this genre true justice. Second, it illustrates a culturally appropriate methodology for researching Māori entrepreneurs with implications for other Indigenous communities. Third, it proposes cultural capital and social capital as a two-part framework for explaining Indigenous entrepreneurial action. Fourth, it shows how entrepreneurship can be empowering for all communities and should be celebrated in arenas that have underrepresented groups such as women entrepreneurs. Finally, this paper demonstrates that entrepreneurship is a promising mechanism for preserving and promoting certain groups that are often underutilized or left behind in certain sectors. It also highlights several distinct contributions to the Indigenous entrepreneurship literature, something that is unfortunately almost always lacking.

The paper relies to an extent on recent and important work from Jessop (2022), who sees four actions as critical to allay the obstacles and challenges that continue to plague women entrepreneurs in the film industry. First, is the need to purposefully fund women-owned businesses in the film industry. The author sees this intentional act as a necessary step that should be done with open transparency and a reporting and tracking system that provides updated reports on what is being done by the numbers and what those numbers ultimately mean. Second, the need to increase and improve women entrepreneurs' network structures or social capital in the film industry. The author thinks this should be done through structured mentoring that holds mentors and mentees accountable for the optimization of this relationship. Third, increase the women entrepreneurs' knowledge of financial literacy, especially as it relates to the film industry, answering questions such as the nuances and solutions to these nuances in the film industry. Fourth, Jessop (2022) calls for the end of systematic bias that creates obstacles and challenges for women entrepreneurs in the film industry and instead recommends a system that disrupts the current status quo and promotes a structure that aids and assists the women entrepreneurs. Future research could look at women entrepreneurs across different countries and across different racial groups.

There are limitations to this paper. An extensive literature review that covered related literature reviews from other countries was not done. In addition, masters or doctoral degree dissertations were not used in this paper, including those from other countries which focus on women entrepreneurs in the film industry. Follow Up papers and presentations could start by looking at doctoral dissertations.

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# The forestry sector of South Africa supporting the achievement of SDG 15

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## Keywords

Conceptual, Efficiency, Forestry, Plantations, South Africa, Sustainable Development Goals.

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## Abstract

**Orientation:** *The National Framework for Sustainable Growth South Africa was introduced to re-orientate South Africa's development path in a more sustainable direction. The South African Forestry Industry is discussed detailing commitment to ensure plantation forest establishment and management within the most socio-economically and environmentally beneficial way possible.*

**Research purpose:** *The South African Forestry Industry is discussed detailing commitment to ensure plantation forest establishment and management within the most socio-economically and environmentally beneficial way possible.*

**Motivation for the study:** *By identifying the way natural resources are managed, the sustainability of the forestry industry, and innovatively assisting people who directly depend upon this industry to work in safety and live under conditions of acceptable quality can be assured.*

**Research design, approach and method:** *The conceptual study focusses on the Sustainable Development goals as formulated by the United Nations and specifically SDG 15. The National Framework for Sustainable Growth South Africa was introduced to re-orientate South Africa's development path in a more sustainable direction.*

**Main findings** *Although many different methods and approaches monitoring and verifying the sustainability of wood are acknowledged, verification from the Forest Stewardship Council is the preferred certification for the World Forestry Organization. The community's increased control over forests will ensure that the UN Voluntary Positive impacts of sustainable forest management (SDG 15) will be followed.*

**Practical/managerial implications:** *Industry is discussed detailing commitment to ensure plantation forest establishment and management within the most socio-economically and environmentally beneficial way possible. By identifying the way natural resources are managed, the sustainability of the forestry industry, and innovatively assisting people who directly depend upon this industry to work in safety and live under conditions of acceptable quality can be assured*

**Contribution/value-add:** *Although many different methods and approaches monitoring and verifying the sustainability of wood are acknowledged, verification from the Forest Stewardship Council is the preferred certification for the World Forestry Organization. The community's increased control over forests will ensure that the UN Voluntary Positive impacts of sustainable forest management (SDG 15) will be followed.*

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## 1. Introduction

The international Sustainable Development Goals (SDGs) were developed and agreed upon by 193 countries to form The Agenda 2030 for Sustainable Development (Pedersen, 2018). At its heart are the seventeen SDGs which comprise an urgent call for action by all countries in a global partnership.

"South Africa aspires to be a sustainable, economically prosperous and self-reliant nation state that safeguards its democracy by meeting the fundamental human needs of its people, by managing its limited ecological resources responsibly for current and future generations, and by advancing efficient and effective integrated planning and governance through national, regional and global collaboration" according to the Department of Forestry, Fisheries and Environment's Green Economy focus area (Department of Forestry, Fisheries and Environment (DFFE), 2022). This ruling results in the developmental route encompassing strategies for greater sustainable and creative use of resources focussing on the integration of "social, economic, ecological and governance systems". African countries

not only embraced the 2030 Agenda, but also stanchly headed towards implementation of the African Union Agenda 2063. According to the African Union (AU: 2021), both these agreements are visions for building a more affluent Africa in 50 years.

The impact of COVID-19 pandemic caused an impediment for sustainable development world-wide (Bronkhorst, 2020). The increased poverty rates and unemployment following the outbreak of the COVID-19 pandemic, negatively impacted the three broad scopes of sustainable development, i.e. economic, social and environmental.

Although it is imperative for countries to have a SDGs coordinating unit, “out of 54 African countries, 80% have a lead unit responsible for SDGs implementation” (Africa SDG Index and Dashboard Report, 2020). In Southern Africa only Mozambique, São Tomé and Príncipe do not have a SDGs unit Africa SDG Index and Dashboard Report, 2020.

Fifty-two African countries, based on 97 indicators across all 17 goals, were ranked by the 2020 Africa SDG Index. This index’s score indicates a country’s position between the worst (0) and best (100) outcomes. Figure 1 below indicates the top 10 of 52 countries, together with their SDG score:

Figure 1: Top ten of 52 countries

Rank	Country	Score	Rank	Country	Score
1	Tunisia	67.10	6	Egypt	65.44
2	Mauritius	66.79	7	Botswana	63.93
3	Morocco	66.3	8	Ghana	62.69
4	Algeria	65.9	9	South Africa	62.20
5	Cabo Verde	65.59	10	São Tomé and Príncipe	61.61

Source: Africa SDG Index and Dashboard Report (2020)

However, according to this African report Africa (SDG Index and Dashboard Report, 2020) even the upper ten countries are still nonetheless 35% away from achieving the SDGs by 2030. The individual SDI scores have advanced very little since 2015.

### 1.1. Environmental goals

An analysis by Department of Performance Monitoring and Evaluation (DPME) indicates a convergence between South Africa’s National Development Plan (NDP) and the SDGs. Close to 74% of 8 the SDG targets are “directly addressed by the NDP, whereas sectoral programmes address 19% of the remaining targets” (DPME, 2022). In 2015 the Millennium Development Goals (MDG) for South Africa was launched in which MDG 7 is built specifically on SDG 14 and SDG 15.

### 1.2. Sustainability Goal no 15



“Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss” (United Nations: Department of Economic and Social Affairs Sustainable Development, 2015). The forest sector itself can be grouped to SDG 15. This directive will include “Promote Sustainable Use of Terrestrial Ecosystems; Sustainably Manage Forests; Combat Desertification; Halt and Reverse Land Degradation, and Halt Biodiversity Loss”. Target 15.2 states that “By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and substantially increase afforestation and reforestation globally”. SDG 15 is directly related to other SDGs.

This paper is a conceptual study directed at the forestry sector of South Africa (timber production, manufacturing of forest products, and tourism) supporting the achievement of SDG 15.

## **2. Research methodology**

### **2.1. Research philosophy**

The Interpretivist research philosophy was considered suitable for this study with the main aim being analysis without making predictions. This approach clarifies the important aspects within a specific context that of SDG 15 in the forestry sector and, furthermore, offers more than one reality (Bronkhorst, 2020).

### **2.2 Research design**

The research design is attentive to the specific situation, therefore, within the complex environment of this particular study, a case study research design was selected. The use of one industry results in the provision of detailed information in which the maximum content proved perfect for transferring to alternative studies (Welman & Kruger, 2004). The context of this study was the forestry industry in SA and, in particular, the sustainable goals within the UN's SDG 15, with the aim of not only meeting the set requirements, but also the achievement of the goals (Cresswell, 2014). An important parameter was that the chosen case had to be a large impact player supporting the achievement of SDG15 within South Africa.

### **2.3. Research approach**

A qualitative research approach (Cresswell, 2014) wherein the data collecting process is specifically perceptible was used. Consequently, the accumulated data is not quantifiable, because secondary data was observed (not measured) and then interpreted.

### **2.4. Document analysis**

Heterogeneous data was not produced by the research, therefore, documents that already existed were applied, as recommended by Bryman, Bell, Hirschson, Dos Santos, du Toit, Masenge, Van Aardt, and Wagner (2018). The documents were selected with the following aims in mind: accessibility for viewing; relevance to the research topic; collecting and summarising physical data through observation. The quality of the documents used in this research study was evaluated against the four criteria that are applicable to secondary data, as set out by Bryman et al (2018). The principles of secondary data that apply to document analysis are authenticity – the evidence should be unaffected and indisputable; credibility – the evidence should have no inaccuracy and spin; representativeness – the evidence should be distinctive in its kind; and meaning – the evidence should be unblemished and logical.

### **2.5. Data analysis and interpretation of results**

In qualitative research, the data processing is performed manually because the secondary data is collected (Fox & Bayat, 2013).

### **2.6. Quality of the data**

The increasing of rigour in the research process results in credible findings (Struwig & Stead, 2013). However, in a qualitative study (Cresswell, 2014) it is not possible to be objective and, thus, subjectivity is a major strength because it is important for the researcher to fully understand the context of the secondary data (Struwig & Stead, 2013). In this study: Persistent Observation – a constant comparison drawn between the different sets of data; and Triangulation (DFFE, 2022), comprise the most positive method of collecting information regarding events and involves correlating new data with the data already retrieved; Inductive reasoning is also applied (logic that stems from specific facts but is drawn to believable generalisations).

## **3. Results and discussion**

### **3.1. South Africa**

South Africa is a medium-sized country with a culturally diverse population with the economy amongst the largest in Africa and classified as an upper-middle-income country (Bronkhorst, 2020). According to the late Minister Jackson Mthembu, the Minister in the Presidency, “the three dimensions of

sustainable development – economic, social and environmental, are profoundly interlinked”. This fact is emphasised by the practice of economic growth without social inclusion or at the expense of the natural environment, resulting in the protection of the environment, at the outlay of the most vulnerable groups and individuals (Sustainable Development Goals (SDG) Country Report, 2019).

The National Framework for Sustainable Development (NFSD) was introduced in South Africa with the main purpose being “to enunciate South Africa’s national vision for sustainable development and indicate strategic interventions to re-orientate South Africa’s development path in a more sustainable direction” (DEAT, 2015). This framework propositions both the strategic priority areas as well as the implementation measures needed to enable prevailing accomplishments of government and its social partners according to the National Framework for Sustainable Development (NFSD) Department of Forestry, Fisheries and Environment (DFFE), 2022. Therefore, to strengthen, advance and realign the inter-related SDGs, governance systems will be capacitated in an achievable economy for society as well as for the environment. However, this growth will be within the following conditions:

efficient and sustainable use of natural resources.

socio-economic systems within the eco-systems; and

basic human needs being met provided the required long-term survival of resources is not destroyed for short term gain. (DFFE, 2022)

### 3.2. Forestry

Throughout centuries, forests have contributed towards healthy living and well-being for all people, resulting in the known benefits prophesied by countries such as Japan and South-Korea. These health benefits are mainly created by the recreational access to urban forests, known as “forest bathing”, through which both physical and mental health benefits are achieved. The populations of rural areas rely on the medicinal value of forest plants because it is not always easy for them to access more conventional health services (Bronkhorst, 2020).

During 2018, “The State of the World’s Forests 2018” declaration was accepted after governments worldwide took decisive action in 2015 by adopting the 2030 Agenda for Sustainable Development, as discussed at the United Nations Summit in 2015. This Agenda, together with the SDGs, became the principal framework for sustainable development. The Food and Agriculture Organization (FAO) of the United Nations (UN) is always exploring alternative ways that forests and trees, together with the people using and managing them, can contribute towards creating sustainable development (Da Silva, 2018).

According to the objectives of the South African Forestry Environmental Guidelines for Forest Plantations (Forestry South Africa, 2019), this practice is a statutory obligation, which must be complied with, stating that: “The South African Forestry Industry is committed to ensure that: plantation forest establishment and management take place in the most socio-economically and environmentally acceptable way, natural resources are managed in a manner which will ensure the sustainability of the forestry, and enterprise people on whom the industry depends may work in safety and live under conditions of acceptable quality” (Forestry South Africa, 2019).

People live in close proximity to, or sometimes just outside of, forests which are seen as a vital source of income, living and security for rural populations (Traditions in Tree Management, 2018). According to the FAO in the USA, these people are providing for themselves with an “income-generating activity in both the formal and informal sectors” (Da Silva, 2018). A problem that is experienced globally, although more so in South Africa, is the associated governance and rights, such as land claims, in remote areas. The inhabitants incline to have stronger occupancy rights over the agricultural land rather than forests, mainly due to the complex history of government control.

African populations are the most reliant on wood fuel (63%), whereby the dependency on fuelwood continues to be one of the most affordable and reliable energy sources as countries move through the process of industrialisation.

Over the last 25 years, forest management, as far as soil and water conservation are concerned, has increased globally. There is a positive universal trend in protecting forests, with the exception of Africa and South America. This fact is evident through the large-scale loss of vast, contiguous tropical forests, together with dwindling local rainfall. The World Forestry Organisation emphasises that forest areas act

as a natural infrastructure by providing deterrents against natural disasters and/or upholding a high-quality water supply (Da Silva, 2018).

The Department of Forestry, Fisheries and Environment (DFFE) directive Department of Forestry, Fisheries and Environment (DFFE), is resultant upon a range of legislation, including National Forests Act (1998) (DFFE, 2021). Although the aim of these directives is to advance and enable the application of the regulations to ensure the efficient management of forests, together with the sustainable use and protection of land and water, the specific objectives of the Department of Forestry are identified in Table 2 below:

Table 2: Objectives

Objectives:	Achieved:
to safeguard, preserve, protect, retrieve and restore depleted and tainted natural resources over the medium term by	the reinstating and rehabilitation of 2 550 hectares of state plantations. the restoring and naturalising of 48 900 hectares of re-established indigenous forests and woodlands and the assimilation of 900 hectares of state-owned indigenous forests and woodlands. executing three projects to sustain the renewal of irrigation schemes.
to confirm the efficient application and implementation of the climate change mitigation and adaptation plan for Forestry, Fisheries and Environment	achieved by September 2021. operations necessary for following the strategic framework implemented

Source: (Bronkhorst, 2020)

According to the Department of Forestry, Fisheries and Environment, the South African forestry industry is categorised as: plantation forestry, wood chip, sawmilling, wood charcoal, timber board, mining timber, paper (newsprint) paper (Kraft liner), poles and treated poles (DFFE, 2021). Forestry wood-based products are classified according to the Harmonized System (HS). The HS is a language used universally as a code for goods. This crucial instrument for international trade, is governed by the International Convention on the Harmonized Commodity Description and Coding System (World Customs Organizations, 2018).

Seven percent of SA's demographic area, close to nine million hectares, is forested Department of Forestry, Fisheries and Environment (DFFE, 2021). Forests are crucial sources for their biological diversity as well as their aesthetic and spiritual benefits which fall into two broad groups: (Coalition for Rainforests, 2017)

An identified market: wood products (industrial processing of wood and for fuel), non-timber products (fruit, plants, bark, fibres and wildlife) and products for tourism and recreation.

Resources not being consumed, but valued by people (spiritual and religious values; protection of water resources and the conservation of biological diversity) (Forests, Innovation of Resources, 2017).

The South African Forestry industry is primarily classified into three categories: indigenous/natural forests, woodlands/savannahs and commercial forests/plantations. According to the DFFE (2022) natural forests usually consist of vegetation, multidimensional, but vanquished by trees. The indigenous forests cover approximately a half million hectare in SA and are mostly found on private property or land under communal tenure and are not used commercially (Bronkhorst, 2020). The woodlands or savannahs comprise a major forest resource in SA which is recognised as the most accessible forest resource for poor communities (DFFE, 2022).

Plantation forestry comprises sections of planted trees in which the trees in each section are of the same species, age and planted at a specific spacing (Bronkhorst, 2020). In SA wood is an important raw material contributing to many industries such as mining, the construction of houses and commercial buildings, poles for electricity distribution and telecommunications, the manufacture of furniture, pulp and paper, and energy production.

Regardless of the relatively small percentage and hectares (ha) that SA's commercial plantation forestry covers, it produces 2.8 million tons of pulp (1.63% of global supply), 2.1 million tons of paper (0.76% of global supply), and 1.3 million tons of sawn timber (0.3% of annual world supply) (Bronkhorst, 2020).

A forest development strategy is followed, resulting in the indigenous forests never being cut, while the country uses plantation forests as a source of timber. This practice has resulted in SA being almost totally self-sufficient for wood-based products with the industry planting 360 000 trees per day, totalling 90 million trees a year (Forestry South Africa, 2019). The norm used in the forestry of unplanted plantation areas is 3.5% to 5% (Department of Agriculture, Forestry and Fisheries, 2019). However, the temporary unplanted areas are below 3% of the total plantation areas (Forestry South Africa, 2019).

As SA is not a naturally forest-rich country, a very small land area is covered by indigenous natural forests. As indicated over the years, and formulated in the then Minister of Water Affairs and Forestry's White Paper: *Sustainable Forest Development in South Africa*, (2014) the economic significance of commercial forestry has increased, which can be attributed to a constellation of factors:

- (i) The growth aspects of the industry are excellent.
- (ii) There are strong diversification possibilities in the wood industry.
- (iii) SA is a world leader in pulp and paper technology, adding to the competitive advantage (Bronkhorst, 2020).

Forestry is such a key driver of the South African economy, afforestation is a priority in rural areas to create viable opportunities for employment and economic activity Department of Forestry, Fisheries and Environment (DFFE), 2022. . The South African forestry sector is primarily classified into three categories: indigenous/natural forests, woodlands/savannahs and commercial forests/plantations. As indicated above, South Africa's forestry industry is categorised as: plantation forestry, wood chip, sawmilling, wood charcoal, timber board, mining timber, paper (newsprint), paper (Kraft liner), poles and treated poles (Bronkhorst, 2020).

South Africa forestry prides itself on the quality of the products being delivered: "commercial forests being managed on a saw-log regeneration basis" Merensky (Pty) Ltd. (2020). This claim is supported by acknowledging that all the lumber carries the prestigious FSC certification, the benchmark needed to differentiate sustainably-sourced wood products, thus, resulting in the immediate recognition of the availability of superior export products.

There are many different methods and approaches aimed at monitoring and verifying the sustainability of wood, measuring the volume, and identifying sources, as well as whether or not the global level is feasible. However, verification from the Forest Stewardship Council (FSC) is the preferred certification for the World Forestry Organization Forest Stewardship Council (FSC). (2019). The FSC is an independent, non-governmental, not-for-profit organisation established to promote the responsible management of the world's forests. The FSC logo found on a wood or wood-based product, indicates that it has been processed according to the standards of the FSC, with the assurance that it is cultivated, or contains wood that comes from FSC certified forests or plantations, or from 'post-consumer waste' Forest Stewardship Council (FSC). (2019). Consultation on a continuous basis between the FSC, businesses, as well as Non-Governmental Organisations (NGOs), workers in the industry, the communities and indigenous people, develops and strengthens forest management and the wood supply chain of custody standards. Through the continuous adaptation to individual countries' national standards of legal, social and geographical surroundings, FSC's international forest management standards are developed (Bronkhorst, 2020).

## 4. Conclusion and recommendations

### 4.1. Conclusions

Baumgartner (2019) postulates that "well managed forests can have a positive impact on biodiversity (SDG 15), create income to fight poverty (SDG 1), provide wild fruit and game to fight hunger (SDG 2), provide medical plants (SDG 3), provide freshwater for drinking and irrigation (SDG 6), and capture and store carbon (SDG 13)". There is, however, the possibility of involuntary concerns as well as aimed clashes between usage of forest-based goods and services. It is well-known that forest-based products lead to lower greenhouse-gas emission. This practice is in line with the substitution of fossil and non-renewable resources. (Baumgartner, 2019) remises that there are trade-offs evident between this substitution and biodiversity. This fact is evident in the expansion of agricultural as well as the increasing usage of fuel wood, resulting in the extraction of timber, being main drivers of deforestation.

Deforestation may result in not achieving the SDGs. According to Baumgartner (2019) “regions can face an increased vulnerability to extreme weather events (SDG 1), there can be a loss of rainfall and crop pollinators (SDG 2), more respiratory illnesses can be caused by forest fires (SDG 3), there can be faster sedimentation of hydroelectric dams (SDG 7), there can be a higher risk of damages from landslides and floods (SDG 9), or there can be a loss of coastal fisheries habitat (SDG 14)”. One possibility is to increase the community’s control over forests. This practice will result in organisations, as well as investors, following the UN Voluntary Positive impacts of sustainable forest management (SDG 15). The governance of the land as well as possible aid in development and improvement of land, is an important consideration when forests are a fixed resource.

According to SDG 15, it is important to not only sustainably manage forests but also reverse “land degradation and halt biodiversity loss” within the joined land-use management. Unfortunately, this protection of biodiversity may lead directly and indirectly to a decrease in average household incomes. Therefore, such defensive measures ought to provide a perspective to identify the trade-off within SDG 15 when planned, as well as the implementation, of forest-related policies. To obtain societies’ sustainable forest management is non-negotiable – as indicated in SDG 15, target 15.2 requires sustainable forest management achieved by 2020. Unfortunately, this requirement is not viable practically in all forestation areas in South Africa.

Due to the conflict of obstacles in both regional and national processes to reach the SDGs, Baumgartner (2019) indicates that not being able to anticipate the trade-offs will result in problem-shifting and even amplify the challenges facing sustainable development agendas. Baumgartner (2019) further postulates in the “worst case, incoherent strategies could put many of the SDGs out of reach by 2030”. To overcome the possible identified problems, the associated effects must be identified and even assessed in an inclusive manner.

#### 4.2. Recommendation

Indication of much stronger, efficient connections between developments within the forest sector is needed. One possible solution is the usage of a systematic integrated assessment, applied from a macro-level standpoint taking a stance on the quantification of possible outcomes. This approach can be challenging, especially when activities and strategies of individual forest actors have to be assessed. Baumgartner (2019) operationalised the notion of second-order sustainability performance (SDG 15) for individual companies. This concept can be transferred to forestry in future research.

#### 4.3 Limitations of the study

As with any other research project, this study has limitations. Two broad areas of limitations are identified in the study as a whole, being issues related to the research methodology and the interpretation of the secondary data. However, the findings of this study are distinctively valuable, although viewed within the realm of the limitations of the study. The study focussed only on Sustainable Development Goal 15. The findings for this SDG are only applicable in South Africa and specifically the Forestry Industry

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# The Case for Integrating and Leveraging Knowledge Management and ELearning for Effective Online Education

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## Keywords

E-learning, Online learning, Knowledge Management, Technology, Global, Local, Knowledge, Management.

## Abstract

*The rapidly growing use of technology in education is changing the way in which knowledge is produced, stored, and distributed to students locally and globally. Today, learning is no longer solely deployed in a physical classroom due to the increased rate of students enrolling in online education for various reasons. The nation's educational system greatly benefits from internet-enabled distance learning, also known as online education, by liberating students from the usual available options of on-campus degree programs such as commuting to school, preparing their day for courses, and being physically present during each cycle of their coursework. Moreover, retention rates at higher education institutions remain a focus in this present pandemic era. Data from the United States (U.S.) Department of Education (2021) revealed an overall drop for full-time students in 2020, from 76.1 percent in 2019 to 75.7 percent. For part-time students, there was an even more significant drop, from 46.5 percent in 2019 to 43.5 percent in 2020. For educational institutions, it is imperative to understand the cause of this lower retention, and the way higher education institutions could overcome this challenge. One method that is being pursued by higher institutions is online education, as a note online education is now accepted as the "wave" of the future, knowledge is being distributed across both space and time. Knowledge management techniques are also used to capture, organize and deliver this knowledge, and management systems can be used to quickly identify the most relevant information and distribute it to meet specific needs. The art of adding knowledge management and E-Learning together, is a form of technological advancement.*

## Introduction

In recent years the rapid and continuous advancement of technology has transformed the world into a knowledge society. A knowledge management and E-learning strategy will ensure that all students have sufficient skills needed in a rapidly developing information society which will promote open and lifelong learning. Recent research reveals great interest to introduce Knowledge Management (KM) ideas to E-learning systems. As per research Knowledge Management can facilitate eLearning, the joint studies of KM and E-Learning focus on the same fundamental goal: facilitating learning in a rapidly changing technological era. As researchers analyze as to where improvements and changes can be implemented to increase the effectiveness of E-learning through the use of Knowledge Management. E-Learning provides learners of the generation new meaning for the diffusion of knowledge, skills, and values. With the COVID-19 crisis, the online platform has proven to be an effective education delivery tool. As a result, the traditional learning method has been replaced with one established by E-Learning. In higher education, E-Learning has become a crucial learning modality in the information age over the past ten years due to its qualities of high interactivity and minimal space-time restrictions. This paper will discuss the basic concepts of knowledge management and E-Learning. Additionally, the way knowledge management and E-Learning can be integrated and leveraged for effective online education will be presented within this paper.

## Literature Review

### Knowledge Management

Knowledge management remains a new discipline with little known about what it actually means (Preiss, 1999 and Shariq, 1998; Nonaka and Takeuchi 1995, as cited by Darroch and McNaughton, 2002). Knowledge is defined as “meaningful information,” knowledge management is the process of creating, validating, presenting, distributing, and applying that meaningful information (Bhatt, 69 and 71). Alternatively, another way to define, knowledge management is that the discipline seeks to create or locate knowledge and manage its flow within an organization so that it “is used effectively and efficiently” (Darroch and McNaughton, 2000 cited by Darroch and McNaughton, 2002). The five phases of knowledge management enable an organization to learn, reflect, and relearn, essential for constructing and maintaining its core competencies (Bhatt 71). The first phase, knowledge creation, involves the development of new and useful ideas (Marakas, 440 as cited by Bhatt, 71). Novel ideas are understood as those that solve problems more effectively or lead to other innovations (Bhatt, 71). The newly created knowledge is validated when it has been evaluated for its effectiveness within an organization (Bhatt, 71). Validated knowledge is then presented to members of the organization through a variety of media, such as emailed documents, cloud files etc. enabling the knowledge to be fully distributed and shared throughout an organization (Bhatt, 72). In the final stage of knowledge management, meaningful information is applied to the company’s “products, processes, and services” (Bhatt 72).

### E-Learning/On-line Learning

In the knowledge economy, organizations must constantly innovate and adapt knowledge in order to remain competitive (Acton, Scott, and Hill, 1). An essential component of this knowledge building process is learning (Acton, Scott, and Hill, 1). In contrast to traditional classroom-based education models, E-Learning is a relatively new approach in which instruction is “delivered via all electronic media including the internet, intranets, extranets, satellite broadcasts, audio/video tape, interactive TV, and CD-ROM” (Acton, Scott, and Hill, 1 and Govindasamy, 2001, as cited in Acton, Scott, and Hill, 1). E-Learning is meant to “improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration” (the European E-Learning Action Plan, cited in Yilmaz, 2012, 150). E-Learning thus allows for a broader application of training within an organization (Beamish et al., 2002 as cited by Acton, Scott, and Hill, 1). The shift in instructional context from classroom to electronic media means that instructional times can be asynchronous, allowing students to decide their limits and the length of time spent on learning (Cheong, 2001; Zhang and Zhou, 2003, as cited by Acton, Scott, and Hill, 3). With greater student control over their instructional schedules comes a need to guide them in making the right choices and avoid decisions that might limit or undermine their learning, striking a balance between student choice and instructor direction (Acton, Scott, and Hill, 3).

### Knowledge Management Implications for E-Learning

The traditional model for E-Learning cannot guarantee the effective transfer of knowledge, especially ‘tacit’ knowledge, defined as knowledge “based on personal experiences, cannot be easily implied and transmitted, and incorporates human-specific factors such as beliefs, perspectives, culture” (Qwaider, 2011, 59; Yilmaz, 2012, 152). In addition, E-Learning technology must be aligned with an organization’s human and business resources in order to produce a competitive advantage (Qwaider, 2011, 59). Within an organization, an effective E-Learning program must share professional skills, the sharing and exchange of knowledge, and the gaining of competencies needed for the individual and the organization’s success (Sammour et al, 2008, 472)

Knowledge management shares this same fundamental goal of “facilitating organizational learning” (Qwaider, 2011, 60). While E-Learning focuses on the individual learner’s acquisition of knowledge. Knowledge management concerns the role and purpose of knowledge within an organization as a whole (Lindstaedt and Farmer, 375). Knowledge management can support individual learners in making connections with their instructors, bringing together “knowledge seekers and knowledge sources in such a way that they can interact with one another and more effectively share tacit knowledge” (Sammour et al,

2008, 470). Knowledge management creates “communities of practice” who can “effectively preserve organizational memory (Sammour et al, 2008, 470).

Knowledge management and E-Learning shares many features that engender integration because both rely on a system architecture and both are meant to facilitate “rather rich communication and cooperation features” (Sammour et al, 2008, 473). While knowledge management is oriented towards the larger purposes of an organization, it holds “the possibility of personalization” for individual members of that organization (Sammour et al, 2008, 473). Finally, in both cases, users are “identified by the system” and have to register with a defined profile, with “different layers of access rights” in order to facilitate the control and flow of information (Sammour et al, 2008, 473). The integration of knowledge management and E-Learning can thus “create synergies to significantly improve the creation of new knowledge and the performance of learning processes (Yilmaz, 2012, 154).

### **Knowledge Management Enhances E-Learning**

Knowledge management can be integrated with E-Learning according to a three-step process, following the Nonaka and Takeuchi’s Knowledge Spiral Model (Yilmaz, 2012, 154). First, in the socialization stage, an organization’s members share their expertise and knowledge with each other via chat rooms, discussion forums, and conference calls (Yilmaz, 2012, 154). This stage also resembles the collection and validation phases of knowledge management. In an E-Learning context collecting and validating knowledge could be achieved through “workshops for sharing information and/or success stories may be organized so that everyone can take advantage of such new knowledge and success stories,” thus enhancing and improving the individual learner’s experience (Sammour et al, 2008, 471). In the next stage of integration, ‘tacit knowledge’ is transformed into ‘explicit knowledge’ that is stored within “a certain structuring and classification system” (Yilmaz, 2012, 154). Here, knowledge management plays a crucial role in providing options for the classification and structuring of this explicit knowledge (Yilmaz, 2012, 154). This integration of knowledge management with E-Learning programs has the potential to increase learning efficiency and reduce time in preparing instructional materials for the teacher (Qwaider, 2011, 60). In the final stage of integration according to the knowledge spiral model, known as the internalization, the explicit knowledge stored within the system is transmitted to the individual learner, becoming for him or her tacit knowledge (Yilmaz, 2012, 154). Knowledge management can also enhance the structure and delivery of curricular materials. An E-Learning program built around knowledge-management principles would have a shared “repository of curriculum revision efforts can include information about the research conducted, effectiveness measures, best practices and lessons learnt” (Sammour et al, 2008, 474). Content would be organized into modules which can be updated by authorized users and customized to fit the needs of specific groups of learners” (Sammour et al, 2008, 474). The E-Learning portal may also contain archived question sets and answer sheets to assist an instructor in assessing student performance (Sammour et al, 2008, 475). Finally, knowledge management can ensure an e-learning course is serving the strategic goals of an organization by “by creating a repository of internal and external information that is relevant to the institution, such as benchmarking studies, trend scans, current programs on offer and data about competing institutions” (Sammour et al, 2008, 475).

### **Application of E-Learning**

In a knowledge economy, learning, and E-Learning are of “strategic significance” for organizations, providing the ability to add value to products and services through knowledge (Kessels, 502). “The development of core competencies is the crucial objective here and requires that firms acquire, create, disseminate, and apply knowledge to improve and innovate processes, products, and services” (Kessels, 502). Traditional methods of learning alone are insufficient to keep employees up to date with rapidly evolving information and skills (Acton, Scott, and Hill, 8). E-Learning can thus be an important means for “organizations to keep up with changes in the global economy” (Acton, Scott, and Hill, 8). Components of such an E-Learning program could include subject-matter expertise, problem-solving skills, the development of reflective skills and meta-cognitive thought processes, and the cultivation of communication skills (Kessels, 503). Online education is a delivery platform that allows students to learn

from home (Bettinger & Loeb, 2017). Online degrees and courses have during the past ten years become the norm for a wide range of non-traditional students, particularly those who decide to continue working full-time or raise families. Many online degree programs and courses are offered through the host institution's online learning portal; however, some are executed using other technology (Bettinger & Loeb, 2017). The main difference between online and traditional learning, despite minor variations, is that students who study online are not required to adhere to the traditional requirements of on-campus degree programs, such as traveling to and from school, planning their days around classes, and being present physically for each cycle of their coursework. A technology-based delivery system is also used in online education (examples include Moodle, Blackboard, and Canvas) (National Center for Education Statistics, 2021). A key distinction is the delivery method's use of technology. Additionally, the COVID-19 crisis demonstrated the effectiveness of the online platform as a method for delivering education, but it also presented difficulties for students of all ages.

The advantages of online learning greatly depend on the student. Some students must seek online education in order to live at home with their children, while others simply like the convenience of learning. One of the most important advantages of online degree programs is location (Bettinger, Fox, Loeb, & Taylor, 2017). In other words, students can complete their education from anywhere in the world. Online courses promise participation regardless of where students live or plan to enroll, potentially changing the educational opportunities available to less fortunate students in traditional schools. Furthermore, online platforms enable artificial intelligence to give the ideal course scheduling and material to each student, hence increasing the quality and learning of education (Bettinger & Loeb, 2017). For instance, the new "intelligent" tutoring programs identify the students' true weaknesses and consider why certain mistakes are made by the students. The instructional materials are then modified in accordance with the needs of the students in these programs.

Nevertheless, such commitments have not yet been fully fulfilled. Rather than leveraging technology to differentiate student learning, the great majority of online classes mimic face-to-face lessons with professors. Online classes may enhance access, but they are also intimidating, especially for students who are less prepared, according to a recent study by Lindsay Fox and Eric Taylor (2017). These students frequently do worse online than they do in traditional classroom settings; taking online courses increases their chance of dropping out, which impedes their ability to advance in their education (Bettinger, Fox, Loeb, & Taylor, 2017).

Online education courses are becoming increasingly popular, one in every three college students now takes at least one course online during their academic career, a figure that has tripled in the last decade (Lederman, 2019). The opportunity for cost savings and the ease of scaling drives ongoing investments in online education from both public and private institutions. The proportion of all enrolled college students taking at least one online class is increasing, rising from 33.1 percent the previous year to 34.7 percent in fall 2018. (Lederman, 2019). With the coronavirus disease pandemic of 2019 (COVID-19) crisis, online education remains the most important driver of growth in postsecondary enrollments (Hoofman & Secord, 2021).

### **Online learning and COVID-19: a meta-synthesis analysis**

The objective of the study was to identify the optimum online platform, class model (synchronous or asynchronous model), and most effective duration of online lectures for medical students. The authors note that the "COVID-19 pandemic has had a catalytic effect on the changes in educational processes worldwide" by causing an abrupt shift from face-to-face to online classes with limited time to plan and prepare course materials. Their global study focused on post-secondary classes conducted through the Zoom and Google online learning platforms. The authors concluded that E-Learning was feasible, but more study is needed to "detect students' and teachers' needs and provide prompt answers and support with digital tools."

### **Educational Transformation: An Evaluation of Online Learning Due to COVID-19**

The study's intent was to gauge the impact of COVID-19 and the subsequent transformation from offline, i.e., on site, to on-line learning. Data was collected through online Indonesian college student

interviews using WhatsApp-call and Google-meets. The prevailing culture historically favors face-to-face learning with web-based instruction as only a support. The pandemic forced the expanded use of on-line instruction and significant adjustments by educators and students.

The study found that students were generally favorable about on-line learning but noted that the need to improve student access to hardware devices (“cellphones, laptops, desktops, etc.”) internet access, and more effective lecturers consistent with the platform. The authors concluded that, to be effective, educational institutions, educators, and teachers must adjust to new environments since educators “will always need technology as an eternal companion in bridging knowledge to be distributed to students, so it is necessary for lecturers to improve their teaching quality and capacity by utilizing IT.”

### **Transition to online learning during the COVID-19 pandemic**

The purpose of the study was to learn student perceptions of on-line learning before and after the COVID-19 impact. The premise was that “students would be overall sanguine to the project given that access, technology integration, and family and government support during the pandemic shutdown would mitigate the negative consequences.” The authors note that research regarding students’ readiness for on-line learning is sparse. Understanding student perceptions is critical for developing successful interventions and correct deficits in learning. Data was collected through an on-line survey of college students at a college in Northeastern North America in 2020. The researchers found student’s feelings about online instructions was mixed, though more than two-thirds felt stressed and more than one-half were afraid or panicked with the transition. Most noted that self-discipline was a problem at least a portion of the time, one-fifth strongly disagreed that their grades accurately reflected how much they had learned with the instructions. Forty-five percent of the respondents felt that the online instruction would leave them behind students who received classroom instruction. The authors found that the students in their study missed interacting with their peers in class and on campus. Many reported difficulties concentrating and heightened stress and most students reported increased workloads as the work shifted online.

### **Effects of Digitalization on Higher Education in a Sustainable Development Framework – Online Learning Challenges during the COVID-19 Pandemic**

The 2021 study of Romanian university students, based on a questionnaire survey of teachers and students, intended to determine the impact of “emergency distance learning “replacing onsite instruction due to COVID-19. In practice, the objective was to determine whether to continue online instruction following pandemic conditions. The authors premised that “a successful transition to online education requires a high degree of adaptability, which involves technological and pedagogical support, as well as elements for monitoring and evaluation of participants to online education. “The authors determined that the teaching method – lectures with a few questions versus student exercises coupled with questions and answers – affected student satisfaction, the latter method being preferred. While noting that some disciplines are better suited for digitalization, the authors concluded that online instruction should be implemented with frequent on-site interaction with teachers to counter the potential effects of isolation.

### **A Survey Study on U.S. College Students’ Learning Experience in COVID-19**

The objective of the study was to identify the impact of COVID’s isolation requirements and the substitution of online versus onsite instruction, especially mental health measured by the students’ expressed levels of anxiety and depression one year after the outburst of COVID-19. Researchers collected data through an online survey of 62 Chinese and American college students that included multiple, spaced Human Intelligence Tests and questions related to learning gains (or losses) during the online instruction period, perceptions of mental health and support during the period, and benefits/barriers accompanying online learning. The authors concluded that the learning experience during COVID was positive, the main complaint being the lack of face-to-face interaction with instructors. Consequently, a hybrid model – a combination of online and onsite instruction – is best as “on-campus, in-person learning is not always the best learning mode, as the majority of us [ researchers] thought.” The authors also noted more research is needed due to the small sample size (62) and the predominance of Asian students (66%).

**Statistics**

**Research Question**

What are student’s perception of the need for integrating and leveraging Knowledge Management and E-Learning for Effective Online Education?

**Hypotheses of the study**

In addition to analyzing the above mentioned objectives, the study also has tested the following hypothesis:

Null Hypothesis 1 Ho: There are no significant differences between male and female students perception of the need for integrating and leveraging Knowledge Management and E-Learning for Effective Online Education

**Methods**

Data were collected from 50 online students using a questionnaire of whether there was a case for integrating and leveraging Knowledge Management and E-Learning for Effective Online Education

		GENDER	Age
N	Valid	50	50
	Missing	0	0

Table 1 Gender and Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	4.0	4.0	4.0
Female	22	44.0	44.0	48.0
Male	25	50.0	50.0	98.0
No entry	1	2.0	2.0	100.0
Total	50	100.0	100.0	

Table 2 Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	4.0	4.0	4.0
18-30	36	72.0	72.0	76.0
31-35	10	20.0	20.0	96.0
36-40	2	4.0	4.0	100.0
Total	50	100.0	100.0	

Table 3 Age

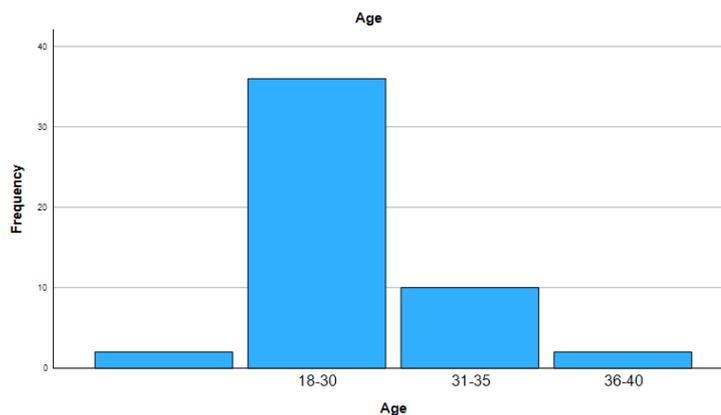
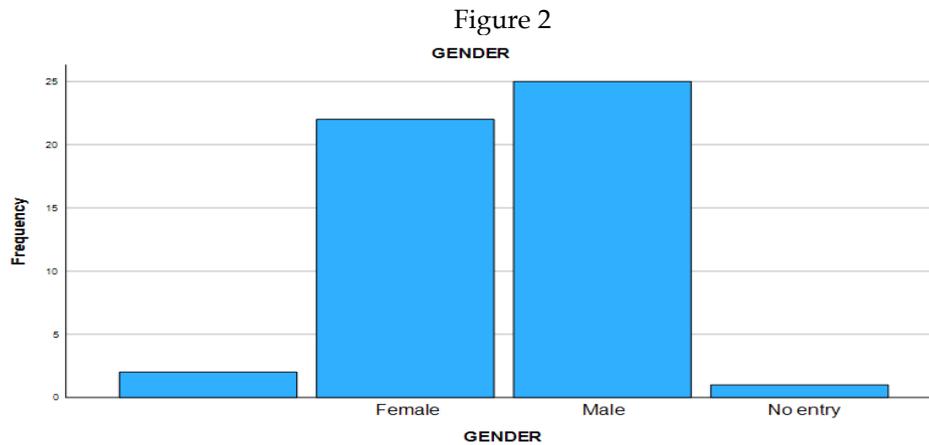


Figure1



### Study population

Data were collected from students in an online university who had completed in-person classes in at Campbellsville University in KY, USA Friday October 28, 2022. We performed convenience sampling by recruiting participants at a weekend face to face Residency. The participants voluntarily provided informed consent. Students were instructed to return the questionnaire to the professor after completing the survey. The duration for survey completion was approximately ten minutes. The appropriate sample size required for regression analysis was computed using the G\*Power 3.1.9.2 software. For an effect size ( $f^2$ ) of 0.02, significance ( $\alpha$ ) of 0.05, and power ( $1 - \beta$ ) of 0.80, the minimum required sample size was 50, and we distributed the questionnaire to 50 students with the hope of no potential withdrawal. A total of 50 questionnaires were retrieved, and after excluding two questionnaires for having incomplete responses, a total of 48 were included in the final analysis.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.928	10	.993	1.148	.355 <sup>b</sup>
	Residual	31.989	37	.865		
	Total	41.917	47			

Table 4 ANOVA

### Measures

#### General characteristics

We collected information about participants' sex and age with sex characterized as male and female and age with the ranges of 18-30, 31-35, 36-40.

#### Statistical Analysis

To investigate the factors for the Case for Integrating and Leveraging Knowledge Management and E-Learning for Effective Online Education, we first examined control variables among the participants. Differences in perception of general characteristics (sex, age,) were analyzed using one-way ANOVA.

### Results

Perception of students for the integration and leveraging of knowledge management and E-Learning for effective education value of 0.335 shows that the correlation was not statistically significant on the students' perception of learning in the 21<sup>st</sup> century. Students' perception is weak on whether it is important to integrate and leverage knowledge management and E-Learning for effective education.

### Conclusion

The Coronavirus pandemic appears to have transformed the world of education, and professors' choice of remote working software for creating a virtual classroom has a direct impact on their success as an educator at this time. Video conferencing software has infiltrated not only classroom instruction, but

also education administration, parent-teacher conferences, and staff and school board meetings (Stone, 2020). Video conferencing software such as Zoom and Teams are attempting to replicate the traditional classroom as closely as possible. This means that professors who use video conferencing software must create a collaborative environment in which students can interact naturally with one another and with the teacher (Stone, 2020). However, there are some issues with virtual communication when using video conferencing software. These difficulties include students' inability to focus on screens, technological issues, a sense of isolation, and teacher training (Stone, 2020). In today's knowledge-based economy, organizations must be able to effectively identify, adapt, and direct their use of knowledge (Darroch and McNaughton, 2000 cited by Darroch and McNaughton, 2002; Lindstaedt and Farmer, 375). Likewise, individuals must be able to access meaningful information outside of the limitations of the traditional classroom-based environment (Yilmaz, 2012, 150). Within organizations, e-learning is a promising tool for distributing training materials, but such information must be communicated effectively and aligned with an organization's larger purposes and competitive goals. Knowledge management ensures that e-learning achieves this function within the context of a larger organization.

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# A research article on Importance of Online Customer Reviews on Customer Purchase

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## Keywords:

Online customer reviews (OCRs), electronic word of mouth, eWOM, Online product reviews.

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## Abstract

*Online product reviews have grown into a valuable source of information influencing purchases with the rise of digital and social media. Customer reviews are a type of feedback for online stores and electronic commerce. Nowadays, consumers have constant access to online product reviews because to resources like smart phones, 24x7 internet access, and other resources to access websites. This product review has developed into a well-liked and successful marketing and sales tool that influences consumer product purchase behaviour. There are many platforms, such as online retailer websites, E-Commerce websites, brand websites, brand community blogs, and third-party reviews, where consumers can participate and engage in discussions about their purchase and consumption experience. Consumer opinions may influence the overall product sales and assist a customer in making a purchase. The goal of this study was to determine whether there is a link between consumer reviews and consumer buying habits. The purpose of this study is to clarify how various internet reviews affect consumers' purchasing decisions and intents. Online customer reviews (OCRs) are now a key resource for product details and have a significant impact on consumers' purchasing decisions. The decision-making process for consumer purchases has been significantly impacted as a result. OCRs' implications on customer behaviour have recently drawn a lot of scholarly interest. Therefore, it is necessary to review these impacts. The most recent research on the connections and linkages between OCRs and client buying is thus examined in this study.*

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## Introduction

In the past, when people in the community wanted to purchase goods or services, they would visit several stores to do so. But technology enabled both the behaviour of online purchasing and the idea of customer reviews on websites became more widespread. In order to maintain the status of the company, online reviews became more crucial. Customers who have used or purchased a particular product from a gullible retailer provide online reviews. Online reviews have spawned a brand-new medium for marketing and communication that fills the void between informal recommendations and the kind of critical criticism that can transform a company. The value of online reviews is actually amazing because they increase purchases. Today's consumer can easily share his experience and opinion about a specific product or service with an infinite number of other consumers around the world through feedback and online reviews due to the internet, which has empowered him to transform himself from a passive to an active and informed consumer. From electronic word-of-mouth, potential customers of that specific product or service use these reviews or feedbacks. In actuality, there are online review communities where everyone may share and hear various viewpoints, and people can reconsider their opinions after hearing from others. The influence of online customer reviews on other consumers' purchasing decisions is growing. The purposes, functions, and characteristics of the many online platforms for product reviews, such as blogs, retail websites, social media, video platforms, and independent reviewing platforms, differ. Word-of-mouth (WOM) has become more widespread as a consequence of the development of the Internet, allowing people to more quickly access the ideas, assessments, and experiences of others. This phenomenon is sometimes referred to as electronic word-of-mouth communication (eWOM). As a result, there are more opportunities than ever for people to gather and share information about products. Instead of relying solely on face-to-face WOM, people are now able to share information via a variety of online channels, including blogs, discussion forums, chat rooms, news groups, and online reviews. Despite this,

there is now more information available than ever before that could affect and support consumer decision-making. OCRs are regarded as a crucial new component in the mix of marketing communications and have developed into a key source of feedback. In the meanwhile, businesses use them as a tool to comprehend how consumers feel about their goods and to help create effective distribution, production, and marketing strategies. Numerous studies have shown how important OCRs are in influencing customers' choices. These benefits mostly result from the customer-focused data that OCRs supply, which is an inferred assessment of and experience with products. OCRs have a noticeable effect on beauty sector sales. The volume of OCRs has an impact on movie box office receipts, according to Liu (2006). The quantity of reviews in the video game sector might likewise have an advantageous impact on sales.

### Review of Literature

Online reviews are crucial in a consumer's decision-making process when making a purchase, according to previous studies. Although researchers have studied and analysed how good and negative reviews affect consumers' purchasing decisions

60% of consumers look at internet reviews at least once a week, according to a recent Podium survey, and 93% of respondents claim that online reviews influence their purchasing decisions. Consumer behaviour in B2B and B2C transactions demonstrates that 82% of people do examine reviews before making a purchase. Furthermore, according to the report, 68% of consumers are willing to pay up to 15% more for the same product or service if they are guaranteed a better experience, placing less value on other factors. According to the survey, buyers frequently read internet reviews, and these reviews have a big impact on their purchasing decisions.

Ma, Y. J., & Lee, H. H. (2012) discuss how online reviews affect consumers' purchase decisions and what motivates them to participate in online reviews. Their study suggests that online marketers should consider streamlining user evaluations and offering some guidance for composing them. Consumers should adhere to certain standards while writing reviews because these reviews have an impact on customers' purchase decisions. The homogeneity of evaluations can be improved because consumers rely on them to learn more about goods and services.

According to research by Prabha Kiran and Vasantha S. (2015), customers' perceptions of risk can be significantly reduced, which can motivate them to make purchases when they buy online. Buyers' comments and opinions help future customers make informed decisions about what to buy, but they also help businesses improve the quality of their goods and services.

Social media significantly affect customer behaviour through online reviews and advertisements, search results, user comments, and online marketing initiatives. According to study by Simona Vinerean, Iuliana Cetina, Luigi Dumitrescu, and Mihai Tichindelean from 2013, peer communication through social media, in particular, has a significant impact on how consumers make decisions.

Different factors have an impact on how consumers of different ages behave when making purchases. Bettina von Helversen, Katarzyna Abramczuk, Wiesaw Kope, and Radoslaw Nielek (2018) discussed how product features, average consumer ratings, and single, highly affective positive or negative consumer reviews affected hypothetical online shopping decisions of younger and older persons. They discovered that average consumer ratings have a significant impact on pupils, while older persons placed less value on consumer data like positive, affective reviews. This illustrates how customer behaviour varies by age.

Positive reviews, picture reviews, extra reviews, cumulative reviews, and description rating are among the elements of online reviews that are impacting consumer purchase behaviour, according to research by Zan Mo, Yan-Fei Li, and Peng Fan from 2015. The outcomes do not depend on the positive or negative ratings, logistical score, or service score. As a result, in order to give customers incentives, sellers can create favourable and thorough reviews during the sales process.

In their 2017 study, Fei L. Weisstein, Lei Song, Peter Andersen, and Ying Zhu examined the moderating impact of buying intentions when examining the effects of adverse reviews on customer pricing perception and subsequent purchase behaviour. The findings of their study indicate that more adverse evaluations with a purchase aim than without are to blame for the bigger negative effects on

consumers' purchasing decisions. This study adds to our understanding of unfavourable online reviews and consumer goals literature while also providing online retailers some useful takeaways.

How much do online reviews affect review attitudes and purchase intentions in regard to a restaurant visit? is a question that Nicky Somohardjo (2017) addressed. that buying intention and review attitude are influenced by internet reviews in part. Despite the numerous review criteria, a favourable valence is still the most important. The overall review attitude, in addition to valence, influences the ultimate purchasing intention. Consumers can be influenced by other people when they connect with them, including when they participate in online word-of-mouth interactions.

The following are questions that Floyd, K., Freling, R., Alhoqail, S., Cho, H. Y., and Freling (2014) have acknowledged and addressed: How does review valence affect retailer sales elasticity? How about review quantity? Which product categories and usage scenarios are more affected by online product reviews in terms of retailer sales elasticity? What categories of websites and online reviewers have the biggest effects on the elasticity of retailer sales?

### **Objective of research**

This empirical study focuses on the relationship between online reviews and purchasing behavior.

To analyze whether the positive reviews are more important than the negative reviews for online customer purchase

To understand the role of negative customer reviews for the Rejection of products

To understand importance of positive reviews for the selection of product

To analyze whether the online reviews facilitate in making the online customer purchase or not

### **Hypothesis of research:**

Hypothesis 1: Positive and negative reviews are important for customer online purchase

Hypothesis 2: Rejection of products is a major criteria from negative customer reviews.

Hypothesis 3: Selection of products is major criteria from positive customer reviews.

Hypothesis 4: Online customer purchase is dependent on online Customer review

### **Research Methodology:**

This study intends to look into how OCRs affect consumer behavior and decision-making. A quantitative approach was used to accomplish this. Based on prior research, a survey and extensive questionnaire were conducted with the use of a Google form that was distributed to respondents from various backgrounds across the nation in order to gather 2374 responses.

After data collection, the next step involved structuring the data using an excel sheet so that it could be used for further statistical analysis. The IBM SPSS Software was used to examine the data. Powerful software like IBM SPSS is frequently used for statistical analysis methods. It is a very effective instrument that is frequently used for quantitative data analysis and model testing in market research. For the purposes of our study, analysis was carried out to compile data and reach a conclusion for the testing of hypotheses using the linear regression model, the chi square test, etc. In order to investigate and comprehend the data patterns, the researcher additionally used secondary data from previous studies and research articles. A population is a group of related things or occurrences that are important for a certain experiment or topic. A statistical population can be a collection of real things or a hypothetical, possibly limitless collection of objects derived from experience. In order to conduct this study, the researcher reached out to people throughout India, collecting responses from both urban and rural locations.

### **Hypothesis Testing**

Hypothesis 1: Positive and negative reviews are important for customer online purchase

H0: Positive reviews are not important for customer online purchase

H1: Positive reviews are important for customer online purchase

Test used for analysis: Chi square test

Interpretation: researcher can say that Positive reviews are more important than negative reviews for customer online purchase

H0 (Null Hypothesis): Negative reviews are not important for customer online purchase

H1 (Alternate hypothesis): Negative reviews are important for customer online purchase

Test used for analysis: Chi square test

### Crosstab

Count		Do you check Negative customer reviews before making an online purchase?			Total	
		Yes	No			
Do you buy product online?	Yes	2011	174	2185	85	
	No	69	120	189	89	
Total		2080	294	2374	74	

### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	684.729 <sup>a</sup>	1	<.001		
Continuity Correction <sup>b</sup>	678.412	1	<.001		
Likelihood Ratio	410.346	1	<.001		
Fisher's Exact Test				<.001	<.001
Linear-by-Linear Association	684.441	1	<.001		
N of Valid Cases	2374				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.86.

b. Computed only for a 2x2 table

### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	494.331 <sup>a</sup>	1	<.001		
Continuity Correction <sup>b</sup>	489.227	1	<.001		
Likelihood Ratio	315.787	1	<.001		
Fisher's Exact Test				<.001	<.001
Linear-by-Linear Association	494.123	1	<.001		
N of Valid Cases	2374				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.41.

b. Computed only for a 2x2 table

**Crosstab**

Count		Do you check Negative customer reviews before making an online purchase?		Total
		Yes	No	
Do you buy product online?	Yes	2011	174	2185
	No	69	120	189
Total		2080	294	2374

Interpretation: researcher can say that Negative reviews are more important for customer online purchase

So, researcher finally conclude that Positive and Negative reviews are important for online purchase.

Suggestions/Marketing Strategy: After the analysis of data, the findings are that the customers are giving preferences to both Positive and Negative reviews on online customer reviews to make their decision regarding the online purchase of a product. So, the company should be very attentive in managing the online reviews. The company can ask the customer to write more positive reviews on the website so that it can influence the customers for making action for online purchase on the other side the company should also look into the Negative reviews on its website so that they can understand the main root cause of the problems and taking the corrective action for making customer more satisfy.

Hypothesis 2: Rejection of products is a major criteria from negative customer reviews

H0: Rejection of products is not a major criteria from negative customer reviews

H1: Rejection of products is a major criteria from negative customer reviews

Test used is Chi square test.

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	494.331 <sup>a</sup>	1	<.001		
Continuity Correction <sup>b</sup>	489.227	1	<.001		
Likelihood Ratio	315.787	1	<.001		
Fisher's Exact Test				<.001	<.001
Linear-by-Linear Association	494.123	1	<.001		
N of Valid Cases	2374				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.41.

b. Computed only for a 2x2 table

Interpretation: As Pvalue is less than 0.05, researcher accept H1. So, researcher accept the hypothesis, rejection of a product is a major criterion from negative customer reviews.

Suggestions/Marketing Strategy: As the customer are reviewing the negative reviews for rejecting product. So, the company should take steps for reducing the number of negative reviews. For example: The company should analyse all the negative reviews and try to conduct one to one interview with the customer to understand it is what which makes the customer unsatisfied. After understanding the main cause of the problems, the company should take corrective action to sort it out for example improving the quality of the products and services.

Hypothesis 3: Selection of products is major criteria from positive customer reviews.

H0: Selection of products is not a major criterion from positive customer reviews.

H1: Selection of products is major criteria from positive customer reviews. Test use is Chi square test.

**Do you check positive customer reviews before making an online purchase? \* Positive Customer reviews help me to select the product while buying online? Crosstabulation**

Count		Positive Customer reviews help me to select the product while buying online?		Total
		Yes	No	
Do you check positive customer reviews before making an online purchase?	Yes	2018	94	2112
	No	105	157	262
Total		2123	251	2374

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	758.602 <sup>a</sup>	1	<.001		
Continuity Correction <sup>b</sup>	752.746	1	<.001		
Likelihood Ratio	480.761	1	<.001		
Fisher's Exact Test				<.001	<.001
Linear-by-Linear Association	758.283	1	<.001		
N of Valid Cases	2374				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 27.70.

b. Computed only for a 2x2 table

Interpretation: As Pvalue is less than 0.05, researcher accept H1. It means that selection of products is a major criterion from positive customer reviews.

Suggestions/Marketing Strategy: The Company should try to increase the number of positive reviews on its website which will facilitate the customer for making his decision for online purchase. The company can launch few online campaigns to keep engaging the customer for writing reviews on its website by providing some royalty benefits to the reviewee. Company should share customer's reviews on the social media which will influence other customer for writing the reviews. Researcher suggest that company should pay some incentives to the customer for writing few reviews. Company may send the personalize message to the regular or loyal customer for writing the reviews.

Hypothesis 4: Online customer purchase is dependent on online Customer review

H0: Online customer purchase is not dependent on online Customer review

H1: Online customer purchase is dependent on online Customer review

Dependent variable: Online customer purchase

Independent variable: Online customer reviews

Test: Linear Regression test

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.586	.078		33.221	<.001
	How frequently you buy product online?	.406	.021	.364	19.022	<.001

a. Dependent Variable: How important are online product reviews for your buying decision?

$$Y = a + bx$$

$$Y = 2.596 + 0.406x$$

Interpretation: It means that there is a strong relation between these two variables. So, if we increase online customer reviews by 1-unit, online purchase will increase by 40.6%.

Marketing Strategy/Suggestions: Company can increase the number of online customer reviews just by asking the customer to write more reviews from where they are, company can also follow up the customer to write a review just after his purchase, they should run a contest where customer himself will come for writing the reviews, they can also reward the customer for writing more reviews on the websites and by writing the customer's name and picture on the homepage.

Table: Summary of hypothesis test results

Sr. No	Hypothesis	Result (Support/Not support)
1	H1: Positive and negative reviews are important for customer online purchase	Support
2	H2: Rejection of products is a major criterion from negative customer reviews.	Support
3	H3: Selection of products is major criteria from positive customer reviews.	Support
4	H4: Online customer purchase is dependent on online Customer review	Support

## Conclusion

This study investigates how different OCR features affect consumer trust and buy intent. Through the development of a comprehensive framework, the effects of OCRs on purchase intention are understood. Additionally, it adds to the body of research by making the case that the conceptual framework for modelling the linkages between OCRs and marketing performance indicators needs to take into account more variables so that more relevant elements can be taken into account logically and rationally. Thus, it is anticipated that the scholarly and commercial communities will find value in this study's findings. By giving corporate communities a greater understanding of customers and how OCRs impact their decisions, it will benefit the business community. Additionally, it will give businesses a vital tool for observing client perceptions of risk and attitudes toward their products, which will help them to adopt the proper marketing tactics. These factors can boost customer trust in a company.

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# Understanding the art and science of new-age advertising: A neuromarketing perspective

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## Keywords

Marketing communication, Neuromarketing, Neuromarketing techniques, New-age advertising

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## Abstract

*Marketers often rely on conventional marketing techniques to appeal to the purchase decisions of consumers. However, research has confirmed that human decisions are based on an unconscious process resulting in the creation of a gap between the perception of the marketers and consumer expectations. Neuromarketing can be a useful technique to study the optimization of marketing communication.*

*The objective of the present paper is to study the application of neuromarketing in advertising. In the first phase, two successful advertising campaign case studies and two failed advertising campaign case studies are presented to identify the need for neuromarketing in this competitive era. The perceptions toward neuromarketing were discussed with nineteen senior brand and marketing communication experts using a qualitative semi-structured interviewing technique. The use of grounded theory helped in unraveling the themes. Emerging themes suggest that neuromarketing has the potential to significantly strengthen the quality and effectiveness of advertising messages. However, there are some challenges like ethical issues and transparency in the application of neuromarketing. Zurawicki's framework on three different dimensions of emotions, involvement, and cognition was proposed to be used as the framework.*

*The contribution of this research would help understand how neuromarketing combined with conventional marketing approaches can create a subtler impact on audience's mind and heart. Accordingly, new age strategies around the science and art of marketing communication can be devised and a new impetus can be provided to marketing theory and practice.*

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## Introduction

In the twenty-first-century VUCA world, the survival of the brands is getting more and more challenging due to stiff competition. Marketers are investing huge money to understand consumers' needs, aspirations and preferences. Even for consumers making choices about their purchase decision is not so easy due to information overload. In this cluttered marketplace, different brands are competing with one another to draw the attention of consumers. Marketers can formulate an effective advertising strategy only if they are aware of the consumers' lifestyle choices since research demonstrates that most of the purchase decisions are made by consumers through a very unconscious process (Dooley, 2010).

As researched by Morrin (2011), most human brain activity appears to be irrational since purchase decisions are generally based on unconscious or subconscious processes. It is therefore pertinent for advertisers to understand the subtle cognitive and emotional aspects of the human mind and heart. Depending therefore on traditional research methods to collect information about consumers' buying behavior and purchase decisions may not suffice. By adopting scientific and objective methods of neuromarketing, marketers can get to know the response of the consumers towards different products or services and will save huge amounts of money which are otherwise lost with an unsuccessful product due to failed research. Marketers should focus more on the subconscious mind which will pass information to the conscious mind (Kumar, 2015). This will also help the consumers as they will get customized choices based on their subconscious choices. Herein lies the role of neuromarketing as a scientific tool for marketing research.

Although the concept of neuromarketing is relatively not very old, the present study is an attempt to identify the relevance and challenges of neuromarketing in the Indian context based on the perception of

marketers. The research makes a significant contribution to academicians and practitioners alike deriving some important learnings and developing a conceptual model.

The paper begins by differentiating traditional marketing approaches from neuromarketing ones as part of the Literature review. Then the concept of neuromarketing and neuromarketing methods are defined. Two successful marketing campaigns and two failed ones are then presented as case studies to understand what makes an advertising campaign successful and what may go wrong despite huge investments by brands. The next phase of the work deals with the qualitative interviews of marketers to understand their views on neuromarketing. Broad themes are identified and an analysis and discussion of these findings follow. Finally, the recommendations, implications, and limitations of the study are presented.

## **Literature Review**

### **Traditional Marketing Research vs. Neuromarketing Approaches**

Traditional marketing research includes quantitative or qualitative approaches such as survey methods, focus group discussions, and interviews. These are primarily self-reported means which have some inherent disadvantages. Sometimes the target audience may face problems in proper articulation or at other times responses may not be accurate due to some bias. This is how neuromarketing methods are different from conventional methods of research as it gives an opportunity to the marketer to know how the human brain of the target audience is psychologically or physiologically impacted (Madan, 2010)

### **Neuromarketing Defined**

Smidts was the first scholar to introduce the term neuromarketing in 2002 in the marketing literature though the neuromarketing technology was being offered by the American BrightHouse in as early as 2001. In fact, the idea of linking marketing with human psychology and biology originated in the 1980s. In the 1990s, specific programs were developed to link marketing with neuroscience and neuroimaging. Gradually, the idea started gaining momentum in the areas of science, business and media studies. Neuromarketing can simply be defined as a study of the human mind and psychology through brain mapping. It is “a subset of neuroeconomics” where the objective is to solve marketing problems through knowledge and methods of brain research. Huber and Kenning (2008); and McDowell and Dick (2013) elaborate it further while explaining the science as knowledge of unconscious motives of human action using biological measurement techniques. This combination allows marketers to study consumer behavior and purchase intentions and to study “the role of emotions in decision-making”. This increases the effectiveness of marketing communications by predicting underlying or suppressed intentions and controlling purchase decisions Javor et al. (2013). A comprehensive definition is given by Lee et al. (2007), which defines neuromarketing as a discipline that applies “neuroscientific methods to analyze and to understand human behavior in relation to markets and market exchanges

### **Neuromarketing Techniques**

The neuromarketing techniques can be divided into two types:

EEG, MEG OR TMS: these are used to measure the changes by directly observing the changes in the electric and magnetic fields of the brain. For example, EEG can be effectively used to identify brain activity in the right or left spectrum. Since the right spectrum of the brain is related to emotions and the left to logic, the investigation would lead to observing the impact of the logical or emotional appeal of the advertisements respectively. Magnetoencephalography or MEG though provides a better resolution of the image. Roullet and Droulers (2010) [25] suggest the use of MEG to examine purchasing decisions. Transcranial Magnetic stimulation is used to observe but to alter induce or suppress brain activity and therefore can be used effectively to draw inferences about the role of different parts of the brain on a particular thought process.

PET, fMRI, and biometric methods are indirect measurement techniques where changes are measured by monitoring the changes in the metabolic processes such as consumption of energy or loss of oxygen or glucose. 23. Some techniques like Positron emission tomography (PET) are invasive where the subjects are injected with radioactive substance however a few others such as Biometric techniques include the direct

monitoring of physiological processes and changes. For example, through monitoring the eye movements, and enlargement of the eye pupil conclusions are drawn based on the attention span, and the focus of the subject.

## Successful advertising campaigns

### Case Study I

Creating emotional appeal by working on the human mind and heart helps tap advertisers to create new markets and compel viewers to take desired actions as per the requirement of the advertisers. One of the very successful brands in this direction is Gillette. It is unimaginable how Gillette made a \$34 billion-dollar enterprise. In the 1900s, razors were only used by men. During this period the concept of women using razors for shaving their body hair was unusual. Women were not bothered about their body hair. However, this got changed drastically due to the efforts made by established brands like Gillette. When it created the first women's razor in 1915. It was made an issue and a problem was created out of it. What is interesting to note is that they not only created a problem but offered a solution also. The company came out with advertisements such as "utilized by the nicely-groomed female to hold the underarm white and clean." The next target for the marketer was leg hair. "Let's Look at Your Legs – Everyone Else Does."



Gradually instigating the emotions of shame and fear a novel marketing strategy was devised. With commercials creating prejudice against body hair, shaving soon got normalized. Slowly, with time it has grown to have an inherent sex attraction attached to it. During the 1980s the company started focusing on women shaving themselves to create sex appeal for men. Thus, working on loneliness, self-esteem, and sex appeal issues among women, a massive women's shaving industry was created.

Gillette emerged as one of the fastest-growing women's personal hygiene care brands in the world. And every year, girls not only in the US but around the world spend huge amounts on razors. Working on human psychology and emotions it became one of the fastest-developing brands. Basically, Gillette could create the entire shaving industry for women and made billions out of it.

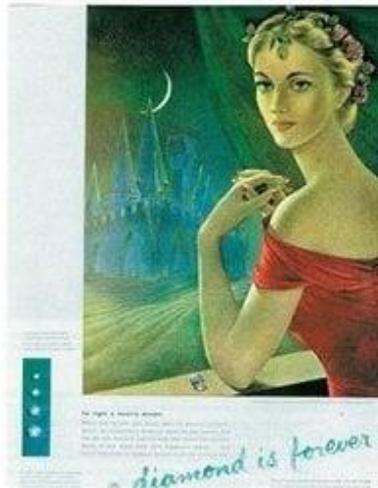
### Case Study II

The story of the success of De Beers' creative idea is a testimony of the fact that successful advertising needs a subtle understanding of human psychology. Since the discovery of a large number of South African diamond mines in 1870, the supply of diamonds was in abundance. When De Beers was established in 1888, it started stockpiling diamonds to manipulate prices - by means of controlling all areas from mining, refining, distribution & even to marketing, with a view to establish themselves as the price setters! De Beers had to find out a method to control the demand and supply of this gemstone in the world. By restricting supply, the diamonds were created as rare gemstones. And therefore, unique and

special. In fact, it created a strong feeling of artificial scarcity – which even now gets reflected in the exorbitant prices of diamonds. In reality, diamonds are not very rare but are one of the more common gemstones!

An advertising agency was then hired in 1938 and a narrative was created around the product. It started a campaign, and the impact was tremendous. Even though diamonds are destructible and technically would not last “forever” – De Beers started creating an emotional appeal by selling their diamonds with the slogan “a diamond is forever”, making diamonds a symbol of eternal love. The sales of the company started skyrocketing from \$23 million to \$ 2.1 billion between 1939 and 1979. And before anyone could realize the diamonds became not only a pricy possession but also an emotional asset – a symbol of true love and long-lasting commitment! The gemstone has now become a new symbol of wealth, power, and ultimate love.

Thus, the credit goes to De Beers for establishing this successful industry through a novel marketing approach. “A Diamond Is Forever” these four words became iconic and have appeared in all De Beers advertisements since then. They revolutionized the way people perceive diamonds – compelling them to buy for their loved ones and thus changing scenario for the entire diamond industry as a whole. De Beers devised a new marketing strategy, instead of marketing the product, they marketed the value.



Failed Advertising Campaigns

### Case Study

#### Coca-Cola - changing the formula

On April 23, 1985, the Coca-Cola Company made a critical decision when it announced changing the taste of its most popular soft drink. The decision was taken because Coke wanted to beat the smart marketing strategies of Pepsi. Instead of countering it with smart advertisements and better advertising campaigns, Coke changed its formula. When consumers started buying this new taste formula, its sweet taste was not liked by the people who were so habitual of the taste of Coke. In other words, brand integrity was challenged. The widespread protests started in the United States, and people started hoarding the cans of the old formula, the phone calls started flooding the offices of the company and the public started blaming every employee of the company for this decision. Some people started getting panicky over the loss of their favorite drink. This decision was termed “one of the worst blunders of advertising history.” Protesters demonstrated with placards such as “We want the real thing” and “Our children will never know refreshment.”



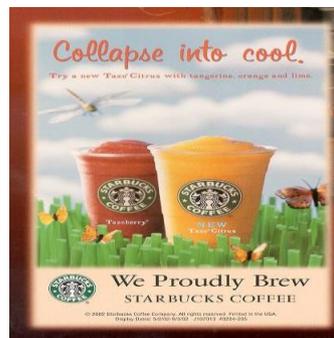
The protests ended when after 79 days the company announced its decision to go back to the original formula which was later on called “Coca-Cola classic”, a few months later. Though for quite some time, both the flavors co-existed side by side and the “new coke” revolutionized the organization’s history, the lesson for the marketers was to be cautious while experimenting with the new product as it can break consumer trust. Proper research and planning are required before making any crucial decision as consumers’ emotions may be attached to a product.

## Case Study II

### Starbucks: Collapse into Cool

The company came out with a simple new advertisement with a visual of chilled Starbucks drinks, two different colored glasses placed together side by side on a grassy field with a few shining tiny insects and butterflies hovering around. The caption: “Collapse into Cool” was shown immediately above this picture.

There was a hue and cry against this visual as the word “collapse” reminded people of 9/11. Moreover, the word and the imagery together were reminiscent of the very insensitive approach of Starbucks when they charged the EMT workers \$130 after the collapse of the World Trade Towers. The company had to announce the withdrawal of the poster.



This is a perfect example of the point that any advertisement or campaign can be misinterpreted by the target audience. Despite the fact that marketers are generally aware of the ethos, the context, the culture, and the people, many things may go wrong. This mishap could have been avoided had any feedback based on some objective research might have been taken and the word collapse could have been replaced with some other word.

Neuromarketing research can be a step further in this direction. To study the perception of marketers in India an exploratory study was conducted.

## Methodology

### Use of Grounded Theory

The reasons for using a particular research design are primarily determined by the objectives of the study being undertaken. Qualitative research techniques are usually employed when a particular

phenomenon must be described or explored (Morrow & Smith 2000). The aim of this study was to investigate the role of the relevance of neuromarketing methods in the field of advertising. As this is an area that has not yet been studied in depth, the use of grounded theory facilitated a more in-depth analysis of the phenomenon.

The essential grounded theory methods that were employed to research the subject included coding and categorization of data; concurrent data collection and analysis; constant comparative analysis; and open, axial, and selective coding (Glaser & Strauss, 1967)

### Methods of Data Collection

Initially, 24 middle to senior-level executives working in the marketing area in different organizations were contacted from the NCR region in India. The NCR has a working population that comprises citizens from most of India's states, so the sample is representative of the country's working population. Convenience sampling was employed to select these participants of the first phase. The sample comprised professionally qualified executives who had given up successful careers. Years of professional work experience ranged from 7 to 20+ years. Face-to-face interviews were arranged with these executives. However, after 19 interviews, data collection ceased as theoretical saturation had been reached (i.e., no new concepts or findings emerged from the data). The interviews were then transcribed for further data analysis. Each face-to-face interview lasted between 40 to 60 minutes. The conversation was kept flexible and open in structure. Open descriptive questions, such as, "what are the challenges they have faced while designing their advertising campaigns?" "What is their perception of neuromarketing techniques?" "What are the challenges they will have to face for the adoption of this technique?" After each interview, informal but detailed notes – called 'memos' in grounded theory – were prepared. These memos helped in the data analysis and the generation of codes. One of the authors transcribed all the interviews personally to maximize the respondents' confidentiality and anonymity.

### Discussion

Most of the participants felt that this method is novel, and more attention is required to be given to the use of neuromarketing techniques since this is critical to understanding consumer psychology and may help provide some conclusive evidence of consumers' responses. The results are according to existing literature when in research by Ohme et al.(2009) while testing two versions of television advertising. Neuromarketing methods were found to be more effective than conventional methods.

Neuromarketing can also be used to for product development to predict the success of any product even before the product is launched in the market. The results here also extend the existing finding in the literature (Ariely and Burns, 2010)

However, most of them admitted that they still trust conventional advertising research methods like surveys, interviews, and getting feedback through online research where the target audience can express their requirements in a candid manner. The reasons for the lack of trust in the use of neuromarketing are the following:

Many of these techniques are very expensive, and the cost of creating initial infrastructure is huge.

The tests are conducted in an unnatural environment which may affect the results. These results may not always be conclusive.

Some techniques are invasive ones where radioactive substances are injected into the body. It is therefore difficult to convince the target audience.

There are ethical issues as data obtained through these experiments may be misused by marketers.

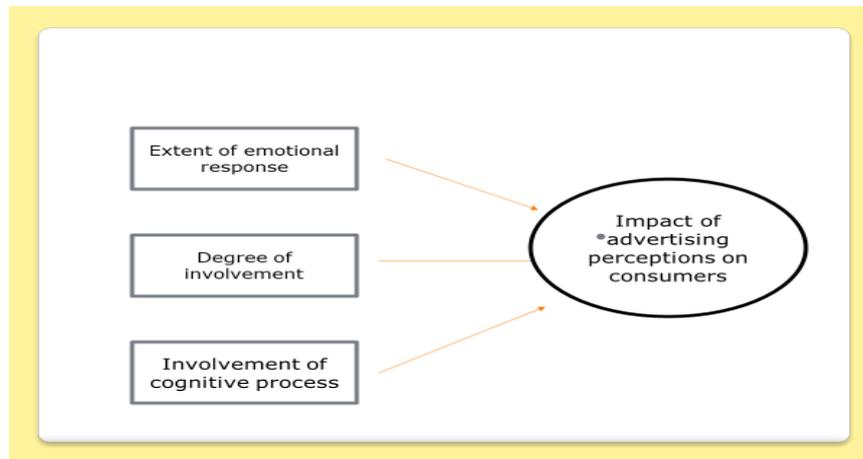
Transparency issues are also associated with the usage of many of these techniques. As the results can be manipulated by the decision-makers.

Many questioned the reliability of results based on the credibility of techniques. This is as per the existing literature. In a seminal research experiment by Bennett et al. (2009) , where fMRI was used to monitor the brain activity of Atlantic salmon and the results were contradictory in nature.

However biometric methods like eye gaze, movement of the eye pupil, and face reading are simpler, useful, and less challenging and are being used by marketers. Experiments are also being conducted by monitoring heart rate, and blood pressure levels though in highly specialized areas.

The following model based on the research of Zurawicki (2010) on the impact of neuromarketing research on consumers' perception may be relevant for marketers (see exhibit I):

Exhibit 1: Model based on the research by Zurawicki



Neuromarketing as an advanced technology is necessary in this age of AI and Machine Learning. It cannot be ignored in these competitive times of survival of the fittest. The fundamental advantage of this technique is to predict human behavior in an objective scientific manner. These techniques would help understand not just apparent thought processes or outward emotions and expressions of the human brain but also the unconscious or subconscious thoughts and feelings. If appropriately used it can predict consumer purchase behavior and marketers can customize their products as per consumers' requirements and preferences. While neuromarketing may help provide some critical insights into marketing-related issues. However, thinking of it as the "magic wand" or "panacea" of all marketing problems may be unrealistic. Since the concept is not very old some more research is required to implement this in real-life scenarios. Neuromarketing should not be considered an alternative to conventional marketing but complementary to existing practices.

### Contributions and Future Research

This research uniquely studies the neuromarketing techniques in the Indian advertising context. From a theoretical perspective, this is one of the few empirical exploratory studies to understand the role of the neuromarketing concept in India. From a practitioner's perspective, the findings have major implications for the advertising industry. Marketers can leverage by deriving value from both by combining some of the neuromarketing techniques like biometric analysis with some existing conventional techniques. Future research using the Zurawicki model using survey method will be relevant for the generalizability of research. Experimental research in the natural environment can be conducted for understanding the relevance and challenges of the application of neuromarketing in advertising.

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#### Notes

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# The Societal and Educational Transformation Projects The Middle East's Educational Construct-The Case of the Lebanese Specific Diverse Educational System (LSDES)

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## Keywords

Lebanese Educational System, Cosmopolitanism, Heritage, Artificial Intelligence, Transformation Manager's Profile, Enterprise Architecture and Critical Success Factor.

## Abstract

*This paper uses the author's Applied Holistic Mathematical Model (AHMM) and specific research and development approach to support activities and decision making (Trad, & Kalpić, 2020a) in the case of the Lebanese educational system. The historical nation of Semite tribes has influenced humanities and their corresponding civilizations for thousands of years. Their legacy includes, education, culture, seafaring, commerce, arts, languages, sciences, creativity, perseverance, and many other fields. Their migrations, curiosity, talent, and their unique holistic vision on major domains of evolution, culture and education, made them transform the Middle East Area (MEA) and other parts of the world; these transformations made humanity advance. This intellectually curious nation includes the: Arameans, Hebrews, Phoenicians, Akkadians, Arabs from the Arabian Peninsula (AAP), Babylonians, Assyrians, Syriacs and other Yemenite tribes. These tribes initially inhabited the lands of Shem (bilad el -Shem), drawing their common origins from the southern Yemenite inlands. They are probably the oldest structured, globalized, and networked civilization that established the first global communication infrastructure and educational eco-systems. They have chosen the Middle Eastern Area (MEA) and the Mediterranean Coast (MC) as a jumpstart for their unique and fulgurant expansions, to reach various parts of the world. Their innovative temperament, culture, discipline, skills, and education, enabled them to develop complex domains, like, technology, maritime navigation, massive constructions, architectural undertakings, the evolution of monotheistic religion(s), alphabet (abjad), evolution of language(s), pure and applied mathematics, sciences, commerce, networked finance, and many other fields. These fields were originated and developed by this exceptional and enduring nation of tribes, which used Aramaic as their lingua franca. From their origin until today, they faced many fatal challenges, confrontations, genocides and even risks of extinction. As the targeted subject is complex and inflammable, the focus is set on the Semite-Phoenicians (SP) or the modern Lebanese, their complex heritage, and their specific educational and multi-cultural system(s). SP's heritage, education, and culture has spread throughout the MEA and much further. SPs inhabited the region of Lebanon that extended from Tyrus to the Nordic city of Tripoli; knowing that since thousands of years, Lebanon designates a region and is only country that has never changed its name. SP city states were avant-garde posts for their expansion in the world to reach the Americas. These well-organized and unconventional expansions brought them cultural, societal, economic successes and have done major changes in the newly discovered regions. This paper's presented facts gave the Lebanese societal advantages that are felt in their Educational System (ES) and this paper will try to present the Case of the Lebanese Specific Diverse ES (LSDES).*

## Introduction

SPs, Amorites, and Hurrians are categorized as Canaanites and that are Semites (iGENEA, 2022). SPs have: 1) A universal nation's approach, where they are promoters of a global culture of peace, culture, and development; 2) A broad world concept, as they experienced and learned to relate to other nations and cultures; 3) An open minded rich political and diplomatic skills, and they can adapt to different climates and geographic environments; 4) Not ethnocentric mentality and have a culture based on knowledge; and 5) An environment of letters, alphabets, books, libraries, inventions and discoveries, and

scientific, philosophical, and religious thinking. From their habitat, shown in Figure 1, they form a nation that lived off knowledge and they spread global culture in the MEA, MC and the Atlantic Ocean’s coasts. They are the first who gave the notion of identity to a large part of the world through their various activities. SP’s culture is the fundament of the MC’s culture and today we can still identify the continuity and evolution of the SPs thought process, like culture and education. SP’s approach to education is based on their affinities (or cosmogony), and they are educators, inventors, researches, and discoverers and willing to spread their knowledge. They developed important skills and organizational methods that made them great educators/teachers in various fields like diplomacy, navigation, law, and other. This essentially influenced the education of young people who received instructions to become creative in production activities, navigation/trade, politics, and diplomacy (ACW, 2018). In fact SP’s affinity for education is historical, and already in the 3<sup>rd</sup> Century (AD) an international school of law and jurisprudence was constructed in Byrut, which reached high distinction, and Gibbon noted that it furnished the eastern Roman provinces, with pleaders and magistrates for three centuries, from 250-550 (AD). The five years course, included Roman Law, and pleaders could choose to study in Byrut, Rome, or Constantinople (Phoenicia.org, 2022a). SP’s approach to education can be optimal for the development of cross-functional profiles, specialized for complex projects.



Figure 1. Ancient Phoenician map (ACW, 2018).

This paper analyses the LSDES and uses the Applied Holistic Mathematical Model for LSDES (AHMM4LSDES) to support the Societal/Educational Transformation Project (or simply the *Project*). The AHMM4LSDES is based on many years of research on: 1) Education, business, technology, and societal transformation projects; 2) Artificial Intelligence (AI); 3) Applied mathematical models; 4) Information system and Software modelling; 5) Cross-functional skills needed for complex projects; 6) Financial analysis; 7) SP’s origins and evolution; 8) Multi-culture and didactics in education; and 9) Enterprise Architecture (EA), standards and methodologies. The author presents the Research and Development Project (RDP) that is based on his proprietary methods that are supported by a qualitative reasoning module, the Heuristic Decision Tree (HDT).

IT Architect Roles	Architecture Board Member	Architecture Sponsor	IT Architecture Manager	IT Architecture Technology	IT Architecture Data	IT Architecture Application	IT Architecture Business	Program or Project Manager	IT Designer
<b>Legal Environment</b>									
Contract Law	2	2	2	2	2	2	2	3	1
Data Protection Laws	3	3	4	3	3	3	3	2	2
Procurement Law	3	2	2	2	2	2	2	4	1
Fraud	3	3	3	3	3	3	3	3	1
Commercial Law	3	3	2	2	2	2	3	3	1

Figure 2. The Open Group’s skills’ framework (The Open Group, 2011a).

The LSDES offers recommendations and the optimal *Project Manager’s* (simply the *Manager*) profile, which extends the profile of the Architect of Adaptive Business Information Systems (AofABIS) or the

technocrat's profile (Trad, & Kalpić, 2014a; Farhoomand, 2004). The *Manager's* profile is the author's research focus. For *LSDES' Manager* the AofABIS must be complemented with specific academic and hand-on skills, like: Didactics, educational curricula, pedagogy, AI, Information and Communication System (ICS), and Methodology/EA skills... Complex environments, can be managed by a *manager's* profile, which basic EA/ICS skills are presented in Figure 2. There are many methodologies that can be used to support *Projects*. In *Projects* the role of ICS is determinant and Digital Transformation Concept (DTC) is common to all types of *Projects* (Gartner, 2016). Unfortunately, *Projects* have a high failure rate, because they lack a holistic approach and that the *Manager*, a specific educational curriculum. A *Project* uses Critical Success Factors (CSF) and Critical Success Areas (CSA) which are managed by the author's framework and are used to analyse the *LSDES*. This paper the Lebanese ES, which is regulated by the *Lebanese Ministry of Education and Higher Education* (MEHE), focusing on complex domains like ICS and engineering domains. In Lebanon, academic organizations (simply an *Entity*) use the following languages: French, English, Arabic, and the Lebanese dialect; these languages are used in early years in schools. English and/or French are mandatory for mathematics and sciences in all *Entities*. According to a 2013 World Economic Forum report, Lebanon was ranked 10<sup>th</sup> in overall quality of education and 5<sup>th</sup> in science and mathematics (Bahous, Bacha, & Nabhani, 2011; The World Bank, 2006; Bilbao-Osorio, Dutta, & Lanvin, 2013). This RDP will try to present MEHE advantages and disadvantages.

### The research and development project

The *LSDES* sets of CSFs are: 1) The history, role and origins of the *LSDES*; 2) The geopolitical influence on the *LSDES*; 3) The societal, religious-ethnic, and cultural predispositions; 4) Evolution of the levels of culture and standards of life; 5) Educational standards and the national system; 6) Interaction with external academic organizations; 7) RDP' and the related framework statuses; 8) The focus is on complex engineering fields, like the ICS; 9) SP's affinity and influence; and 10) The *Manager's* profile, which is the most important CSF. Actual *Projects* are managed as silos where their components create a messy system that is based on educational and technological sub-systems. The AHMM4LSDES based Decision Making System for *LSDES* (DMS4LSDES) can be used to solve *LSDES* problems, by offering sets of solutions. Problem solving uses a central qualitative method that is based on an HDT process, which uses quantitative methods at its nodes. AHMM4LSDES and the author's framework are domain driven and is agnostic to a specific *Entity*, methodology and technology (Trad & Kalpić, 2020a; Trad, 2021a, 2021b).

### The Author's Framework and the RDP

RDP's concept is managed by the author's framework or the *Transformation, Research, Architecture, Development framework* (TRADf), which is composed of various modules. In this paper, parts of the previous author's works are reused for the better understanding of *TRADf and LSDES*, like: 1) The Educational Transformation Project's Remote Group Work (Trad, 2022a); 2) The historically recent Rise and the 1975 Fall of the Lebanese Business Ecosystem (Trad, 2019a); 3) The Business Transformation Framework and Enterprise Architecture Framework: Organisational Asset Management in the Lebanese Context (Trad, 2021a); 4) The business transformation enterprise architecture framework for innovation: The role of artificial intelligence in the global business education (Trad, 2021b); 5) The Selection, and Training Framework selection and training framework for *Manager's* in Business Innovation Transformation Projects-Educational Recommendations (Trad, & Kalpić, 2014b); 6) The transformation framework The role security in the global education system (Trad, 2021c); 7) The Societal Transformation Framework: The Nation of Semites-The Phoenicians (Trad, 2021d); and other works. In this paper the aim is to upgrade the AofABIS profile that become the *Manager* complex projects. Empirical research validity checks if the RDP is acceptable as a contribution to existing scientific knowledge and uses a Proof of Concept (PoC) or experiment, to prove that the resultant recommendations are valid. Using Google's scholar portal, in which the author combined the previously mentioned keywords and key topics; the results clearly show the uniqueness and the absolute lead of the author's *TRADf*; which makes the author's works' credible, successful and useful. In the initial RDP phase, *TRADf* has to be tuned for the Research Question (RQ).

### The Research Question, Research Limitations, and Knowledge Gap

The application domain are ICS and engineering domains, and the *Manager's* profile must include the following skills for managing: 1) Agile, and EA environments; 2) Business architecture; 3) Team members' integration; 4) *Project* management; 5) Integrated development environments; and 6) Coordination of implementation of *Project* modules. The RQ is: "What are the advantages and disadvantages of the LSDES in ICS related fields?" An important research gap and limitations exist, that is why the author proposes a holistic approach that unifies the following fields: 1) Implementation of a unique LSDES for ICS; 2) Define the *Manager* profile; 3) LSDES's interaction with other external *Entities*; 4) To use an DMS4LSDES; 5) To educate to localize Global Organized Financial Predators (GOFP); 5) Empirical Engineering Research (EERM) model and the use of CSAs and CSFs management.

### EERM, CSFs and CSAs

This RDP is based on the EERM and it includes a PoC that is based on Action Research (AR), HDT, and CSAs (Easterbrook, Singer, Storey, & Damian, 2008). AR is an optimal method for Professors and researchers, academic staff... Especially, AR is helpful in education and can be defined as the process of learning process that improves the quality of the educative system. AR provides the academic staff with valuable knowledge and technics on how to improve educational practices or resolve problems. AR uses a systematic and participatory process and offers beneficial opportunities for Professors. AR supports the professional development of Professors, by increasing their empowerment, and linking research and practice (Hine, 2013). As shown in Figure 3, a CSA is a selected set of CSFs, where a CSF is a set of Key Performance Indicators (KPI). Each KPI corresponds to an LSDES requirement and a problem type. CSFs reflect LSDES problem types that must meet defined *Project* goals. Once the initial set(s) of CSAs and CSFs have been identified, then the *Project* can use the DMS4LSDES and standards to propose solutions (Trad, & Kalpić, 2020a).

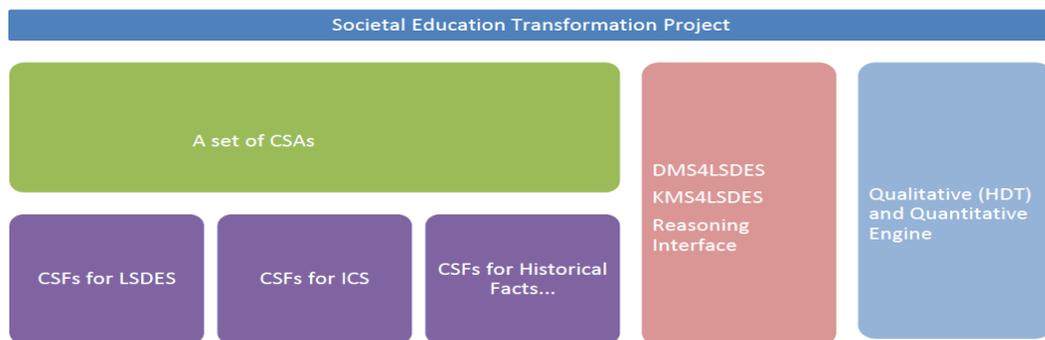


Figure 3. The CSA and CSF concept.

### AI, Standards and Frameworks

*TRADf* interfaces standard frameworks like, The Open Group's Architecture Framework (TOGAF) that supports EA and AI activities, to support intelligent behavior, by analyzing the system (European Commission, 2019). AI includes the following fields (McCarthy, 1989): 1) Mathematical Models (MM) and algorithms, like the AHMM4LSDES; 2) Decision trees, like the HDT; 3) Learning fields, like AR; 4) Automated scheduling and planning; 5) ICS/technology, resilience, and processing environments; 6) Robotism, automation, and recognition; 7) Data based decision approach; and other advanced topics. *TRADf* uses a set of AR/HDT actions, which are implemented in a collaborative context. AR tries to understand underlying causes of problems and is an iterative learning and educational process. *Projects* must use an MM like the AHMM4LSDES to verify their status and integrity.

### The AHMM4LSDES and the LSDES

The AHMM4LSDES includes a dynamic defined nomenclature which can be used to facilitate the integration of any *Entity*. AHMM4LSDES's nomenclature is presented in Figure 4. AHMM4LSDES' instances support the DMS4LSDES, by using CSFs weightings and ratings (in phase 1) and is based on multicriteria evaluation. The *Entity's* EA model and its Architecture Development Method (ADM) are

RDP's kernel elements. The AHMM4LSDES and its underlining set of created instances is based on the HDT (Della Croce, & T'kindt, 2002). In each HDT's node a precise call to DMS4LSDES functions can be executed. The AHMM4LSDES uses an objective function, for the maximization or minimization activities. for supporting *Projects*.

Basic Mathematical Model's (BMM) Nomenclature		
<i>Iteration</i>	= An integer variable " <i>i</i> " that denotes a <i>Project/ADM</i> iteration	
microRequirement	= (maps to) KPI	(B1)
CSF	= $\Sigma$ KPI	(B2)
Requirement	= (maps to) CSF = $\bigcup$ microRequirement	(B3)
CSA	= $\Sigma$ CSF	(B4)
microMapping microArtefact/Req	= microArtefact + (maps to) microRequirement	(B5)
microKnowledgeArtefact	= $\bigcup$ knowledgeItem(s)	(B6)
neuron	= action->data + microKnowledgeArtefact	(B7)
microArtefact / neural network	= $\bigcup$ neurons	(B8)
microArtefactScenario	= $\bigcup$ microarteffect	(B9)
AI/Decision Making	= $\bigcup$ microArtefactScenario	(B10)
microEntity	= $\bigcup$ microArtefact	(B11)
Entity or Enterprise	= $\bigcup$ microEntity	(B12)
EntityIntelligence	= $\bigcup$ AI/Decision Making	(B13)
BMM( <i>Iteration</i> ) as an instance	= EntityIntelligence( <i>Iteration</i> )	(B14)
The Generic AHMM's Formulation		
AHMM	= $\bigcup$ ADMs + BMMs	(B15)
AHMM's Application and Instantiation for LSDES		
<i>Domain</i>	= LSDES	(B16)
AHMM4( <i>Domain</i> )	= $\bigcup$ ADMs + BMMs( <i>Domain</i> )	(B17)

Figure 4. AHMM4LSDES's nomenclature (Trad & Kalpić, 2020a).

### Supporting Projects

Dynamic *Entity's* structures, hyper-advances in ESs and related AI, DMS4LSDES, ICS depend on the available resources (like data), to meet challenges. In the last few years, many *Entities*, like the MEHE, have failed to transform and to implement adequate educational innovation policies. Many credible sources have proved that the failure of *Projects* is due to the complexity of encountered problems. The MEHE is recognized and recommended worldwide for its high standards universities and quality; and is committed to the United Nations Charter, to maintain good quality of education (El Khaled, Novas, Antonio Gázquez, García, & Manzano-Agugliaro, 2016). The MEHE like all other ESs depends on the national, historical heritages and the surrounding geopolitical context.

### The historical heritage and the geopolitical context

#### The Heritage

This section presents the CSFs that influence the LSDES, considering Lebanon's cosmopolitan society that inherited mainly SP's characteristics. Genetic research conducted in Lebanon proved that the majority of the Lebanese population carry SP genetic identifiers, what is a common national heritage (Caquot, 2017). SP's affinity for commerce, education and organized massive constructions that started with King Abiff Hiram (KAH), remain the main characteristics of modern Lebanese, which is a holistic feature that is essential for the *Manager's* profile. Like Rafic Hariri's profile, who succeeded in rebuilding the destroyed Byrut and other parts of the Lebanon in record time. SP represents an authentic Semite culture, affinity, predispositions, and heritage. Unfortunately, Lebanon's ethno-religious instability is due to the region's socio-political situation and Lebanon tries to preserve its complex multicultural democracy (Habib, 2009). Lebanon's main ethno-religious groups are: 1) Levantines, or Latins of the Orient, predominantly a

Christian population; 2) Arabs, the remnant of the multiple Arab Muslim conquests; and 3) Other groups. Lebanon was a French-allied dominion that had a strong binding with France, who helped it become a part of the European educational and cultural systems (World Journals, 2002). Lebanon has a rich ethnical mosaic, LSDES, tourism based on Arab Gulf countries, and a loose and liberal economic system which is continuously disrupted by GOLF activities. In spite of time and consequent MEA's geopolitical dramas, Lebanon still has preserved its Westernized SP heritage and has even been capable of enclosing other cultures to make it a unique cosmopolitan society. Its cultural mixture made the Lebanon a focal point of a networked diaspora that enabled the development of the LSDES. Its educational and financial predispositions attracted many global *Entities* (Fregonese, 2009; Zalloua, 2004). Aggregate Lebanese communities create a virtual/confederal environment related to global communities. LSDES' main advantage, is that Lebanese students are thirsty for knowledge and sciences, knowing that Lebanon had ancient academic institutions like Byruti's law school, that had the following characteristics: 1) It was a centre for the study of Roman law in classical antiquity; 2) Its professors made major contributions to the Codex of Justinian and it achieved wide recognition and was known as the *Mother of Laws*; and 3) It was one of the few schools allowed to teach jurisprudence... Lebanon's most significant heritage is the Lebanese language which is an Aramaic dialect and more specifically *Syriac*.

The Lebanese language is a distinctive and a unique language that can be considered as the root of Lebanism (LLI, 2010). The Lebanese language and the Arabic language share common roots and are offshoots of the original Semite languages and is spoken by millions of Lebanese in Lebanon and the world (about 20 million people). Phoenicology is a sub-discipline of Archaeology exclusively studying of ancient Phoenicia, occupying modern-day Lebanon and Tunisia, and to a lesser extent, Cyprus, Malta, Sicily, Sardinia, Corsica, Israel/Palestine, and Spain. It is difficult to practice Phoenicology, because of the scarcity of sites and the major destructive campaigns against the SPs. Carthage and Tyre have been destroyed by powers like Rome and Greece; and actually by Iran. Although they faced major challenges SPs and other Semite tribes, succeeded due their capabilities to colonize the MEA and the MC (Trad, 2021d).

### MC's Colonisation and SPs' Capacities

Many concrete evidences confirm that SPs crossed the Atlantic Ocean to access other continents, where they sailed using technics like: Stars' orientation, Sea flows, and Winds' courses. These technics supported large and precise distances navigation. Brazil has many SP sites, and many proves indicate that they settled in its north-eastern region. In Longá region, there is a lake where SPs harbour with a *Carpássios* (old ships) platform. The predominant Maya, Toltec and Aztec civilizations share a common SP ancestor (Karam, 2020). This proves SPs' seafaring and massive constructions' capabilities and other known cases like, KAH who was present when Cyrus has blessed Tyrus and saved the Sidonians; and his most important deed was the alliance with King Salomon, that is considered as the first civilized alliance. This alliance put basis for massive constructions and commerce. King Solomon and his father, David, were greatly indebted to KAH, for his support in the construction of the Hebrew Temple of Jerusalem. The inhabitants of Tyrus, were known for their exceptional skills as artificers, merchants, and seafarers. Tyrus had a full body of architects known as the *Fraternity of Dionysian architects* (Trad, 2021d). These facts have brought the Lebanese many challenges.

### Major Challenges

Armenians, Lebanese Christians, Aramaic speaking Assyrians of Iraq, south-eastern have been decimated in the 1915 Great Genocide that was committed by the Ottomans and their German ally. These persecutions decimated Christian minorities in the MEA, where in Lebanon 70% of its Christians vanished. SPs heritage or Phoenicianism, provoked destructive conflicts, like the 1958 and 1975's externally organized civil wars, between pro and anti-Semite parties. These conflicts are irrelevant, because scientifically all Lebanese have SP origins. Another major challenge is the rise of terrorism which draws roots from the Assassins Order founded by *Nizari Isma'ili* sect of Shia Islam; they launched terrorist actions on Moslem and Christian personalities alike (Elayi, 2013). Modern terrorism proves the cyclic nature of MEA's conflicts; where Pan-Arabism joins Germanic National Socialism, in the logic of Anti-

Semitism. Notorious Nazi criminals were engaged by Pan-Arabists, to organize and decimate Semite minorities. Like the case of the Austrian Nazi, Alois Brunner, the right hand of Adolf Eichmann, who was working for the Syrian genocidal dictator Assad. Brunner and his Assad's assistants tortured and assassinated, with utter brutality, many Lebanese and destroyed cities like Damour, Zahlé, Tripoli, Beirut, Qaa, Until today tens of thousands are still missing (Wikipedia, 2020a; Trad, 2021d). These major challenges created a complex cohabitation.

### A Complex Cohabitation

The complex cohabitation resulted in a complex democracy, which is very hard to follow, but it corresponds to the Lebanese reality (Habib, 2009). ... And, due that Lebanon has 22 authentic ethno-religious minorities. Despite this complex cohabitation, the tolerant Lebanese want to live together. This fact contradicts the reasons for the 15 years an imposed civil war, which is known as the *War of Others* on Lebanon. Antoine Francis' proved that an external actor caused the civil-war in Lebanon (Francis, 2002). Before the civil-war, the Lebanese currency became a solid currency, and Lebanon's standard of life became respected worldwide. Its predispositions and its *dolce vita* attracted many institutions, and *Entities* to install their activities in Lebanon (Fregonese, 2009). But this fulgurant evolution did not last, because a GOLF wanted it to be disrupted. A GOLF well-known case was Beidase's Intra Bank, was a mighty worldwide bank that made the Lebanon an elite hub. These facts supported LSDES' evolution which was influenced by the facts: 1) The Aramaic language and the Lebanese dialect; 2) The Islamo-Arab cultural/language where Lebanon is a leader in Arabic literature and culture (Hitti, 2002); 3) Other minorities like Lebanese Israelites who still are attached to Lebanon and are an important part of its cosmopolitan society (Forbes, 2016); and 4) Other cultural influences. All these problems were faced by Lebanon, who was supported by its historical and loyal ally France.

### France the Ally

The Lebanon and Europe, and more specifically, France, have a long historical relationship. Many Frenchmen settled in Lebanon and many Lebanese, predominantly settled in France to create a cohesive Franco-Lebanese community, which includes prominent personalities, like, Charles Malik, Petro Trad, Charles Helou, Michel Chiha, Camille Chamoun... The legendary French president, Charles De Gaulle, who lived in Lebanon, contributed to a strong vision of the Franco-Lebanese community (Bitar, & de Fouchécour, 2015). Lebanon's eternal ally, France, has always played a decisive role in the survival of Lebanon and its culture and ES (AFP, 2022). which includes Lebanese who have never been in France, but have fully embraced the French culture, language and its secular republican values; and have even adopted the flag shown in Figure 10, which is the official French flag with an incrusted Lebanese cedar. The Lebanon and its MEHE have an advanced equality concept.

### Equality Concept

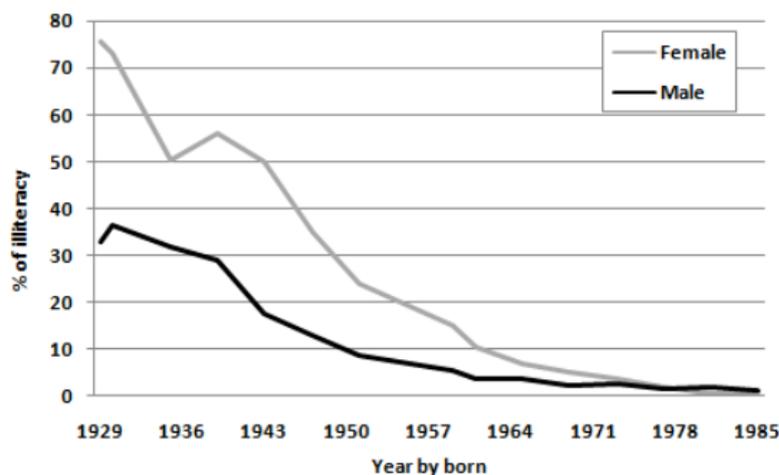


Figure 5. Percentage of illiteracy by gender and age.

Figure 2 shows that the level of illiteracy among the adults and it shows the following facts: 1) Illiteracy levels are increasing proportionally with age which is positive; and 2) The gap is practically null at the age of 15, this negligible gap shows the authentic Lebanese awareness of equality (El Khaled, Novas, Antonio ut Gázquez, García, & Manzano-Agugliaro, 2016). Lebanon's equality concept can be envied even by north European countries because education is one of its main stubs; unfortunately its unstable geopolitical context makes its advantages hard to preserve.

### Geopolitical Context

The *LSDES* is dependent on Lebanon's geopolitical construct (that has western and oriental views) and also on MEA's instability. Lebanon has in some periods, optimal geopolitical context that backs the *LSDES*, like the following facts and events: 1) The Sykes Picot agreement which defined the spheres of MEA's influence and control of the MEA. In which allied France gained control of Lebanon; 2) The strong Western influences (French, European and USA's) on Lebanon's society, culture, and *LSDES*; 3) Local views on geopolitics supported by: Camille Chamoun, a Western supported president of Lebanon who developed a pro-Western geopolitical concept of Lebanon, Charles Malik who considered Mount-Lebanon as a strategical fortress, Philip Hitti who saw Lebanon as the centre of Arab history and literature; 4) In 1947, a United Nation (UN) group including *Charles Malik* developed the *International Bill of Human Rights* (United Nations, 1947); 5) The role of demography and the decline of minorities due to external destabilizations (directed by Syria and their Russian allies); and 6) Even if the complex geopolitical context Byrut is striving for keep its cosmopolitan structure and to remerge as global and regional *LSDES* hub.

### BYRUT AS AN LSDES HUB

Lebanon must enforce: Confederal system, neutrality, secularity, and distance itself from MEA's conflicts. Byrut has always faced many challenges and risks of destruction and actually it is facing historical difficulties. Byrut's influence on the *LSDES*, can be supported the following sets of CSFs: 1) Evolution of the levels of education and standards of life; 2) Cosmopolitanism, diversity, and Byrut's demography; 3) Geopolitical and regional events' influence; 4) GOFP's dangers and prejudice, which in the last few years emptied Lebanon's bank and transferred this richness to Switzerland, leaving its population at the level of deep poverty; 5) To become and open and peaceful city; and 6) To interact with global ESs. The *LSDES* was influenced by the eminent Byruti elite community, which was made from nine families: the Sursuqs, Trads, Bustruses, Tuenis, Khuris, Debbases, Tabets, Naggiars, and Farahs; which were labelled as the nine families. Byrut and other CSs were at the origin and epicentre of democracy.

### The Epicenter of Democracy and Neutrality

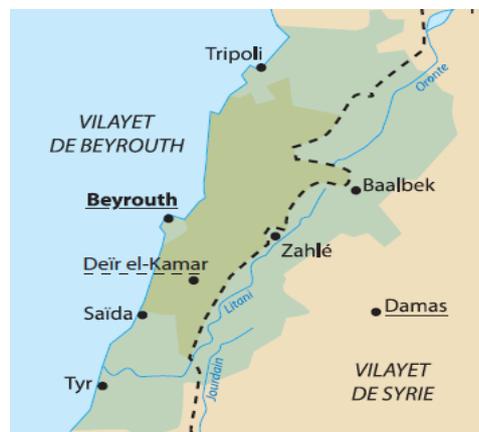


Figure 6. Lebanon's historical region.

Democracy is considered to have come into life in Athens at the end of the sixth century BCE. Simon Hornblower's notes that: *'The Phoenicians... had something comparable to the self-regulating City States or polis [and there is] the possibility of SP origins for some of the Greek political arrangements we most*

*admire. Scientific study in this area has, however, hardly begun'*. Where some other research in this area have been conclusive and considered that SPs were the first to apply democracy and SP City States (CS) had democratic government structure long before Athens (Robinson, 1997; Stockwell, 2020a). This unique heritage of freedom, independence, and democracy is still felt in Byrut and other SP CSs. A highly confederal and democratic SP characteristics enabled a neutral geopolitical attitude, which Lebanon is hardly trying to defend; but unfortunately, external extremist regional powers are trying to change these historical facts. A historical confederal mentality is mainly SP regions were managed as confederal CSs.

### SP Main CSs

SP CSs are: 1) Tyre, which was for centuries the leading CS; 2) Sidon is the 3<sup>rd</sup> largest CS in modern Lebanon; 3) Enfeh is located in North Lebanon; 3) Amia is located on the top of a hill drawing back to the 2<sup>nd</sup> millennium BCE; 4) Arqa is a village northeast of Tripoli and has archaeological evidence drawing back to the Neolithic period; 5) Baalbek is a UNESCO World Heritage Site due to the important of ancient Roman ruins; 6) Botrys is one of the oldest cities worldwide; 7) Byblos is the oldest civilized city that has been continuously inhabited since 9,000 BCE; 8) Sarepta lies between Sidon and Tyre in the south of Lebanon; 9) Tripoli is the second largest city in Lebanon; 10) Byrut is the capital and the largest Lebanese city; it was inhabited more than 10,000 years ago, and its name originates from the SP: *be'erot* (wells), underground water sources which are still used today.

### Byrut CS a Capital

Byrut is a cosmopolitan CS with a unique, ethnically diverse liberal system initially designed by Michel Sursock and etro Trad (Tarazi-Fawaz, 2014; Toufic, 2004). Its fragilized cultural, ideological, and cosmopolitan mixture made it a focal point of a networked diaspora and enabled the development of global powerful services backed by a leading LSDES and the Byruti financial hub. Byrut is a mixture of many minorities and cultures and until the year 1975 it had an outstanding economy and formed a cosmopolitan Byrut's *Style de Vie*, which popularized its LSDES. Its exposed LSDES, cultural and ethnical mixture made Byrut a very attractive city and a leading educational centre. Byrut's various predisposition attracted many businesses, universities, institutions, and personalities to create and promote their activities in it (Trad, 2019a; Fregonese, 2009). The evolution and transformation of Byrut is an extremely a complex process and there is a need for an evolutionary process to become a leading educational hub which is a long-term process that includes the improvement of security and infrastructure; and above all to make it a disarmed, secular, and open/neutral city. The *Project* must deliver a conflict prone strategy to support the LSDES (Trad, 2019a). The LSDES, Byrut's economy, evolution, and finance depend on the following facts: 1) Existing recognized *Entities*; 2) Globalized banks and financial institutions; 3) Local resources and capabilities; 4) Historical Byrut's sites; and 5) GAFP's destructive tactics. But unfortunately, there are many fatal dangers like the latest major terrorist act that destroyed Byrut's port.

### The Port of Byrut-The Blast

The port of Byrut is an archaeological site that is located between Rue Allenby and Rue Foch in Byrut. Studies have proved that the Bronze Age waterfront was laid behind today's port due to coastal regularization. It was excavated and reported on by Josette Elayi and Hala Sayegh in the year 2000 and determined to date to the Iron Age III and Persian periods. Byrut has seen fulgurant evolution and many catastrophes, like the August 4<sup>th</sup>, 2020, Directed Terrorist Act (DTA) that shook it, killing many people and destroying the Christian sector of Achrafieh. The destroyed area is around SP's historical port and the blast caused major damage throughout the city. The French President Emmanuel Macron was the first foreign world leader to urgently visit Lebanon after the DTA, which shows the special Franco-Lebanese relationship. Macron stated: *I express my fraternal solidarity with the Lebanese people after the explosion that led to so many victims and to so much damage tonight in Beirut... France stands by Lebanon's side. Always. French aid and resources are on their way to Lebanon...* He also the historical term: *Lebanon is France and France is Lebanon*. A two-week state of emergency was declared and DTA's cause is linked to stocks of ammonium nitrate in a warehouse used by illegal terrorist pro-Syrian and Iranian militias. The DTA destroyed what was left of the Lebanese commerce, exchange and cultural life.

### Commerce, Exchange and Cultural

SPs main activities were and still are, educational, commercial, and cultural exchanges with various regions of the world. These exchanges helped them accumulate skills, knowledge, wealth and made them develop the LSDES. SPs established colonies which insured valuable exchanges and the latest excavations of SP sites, have recovered materials that identify connections between remote SP colonies and Lebanon as shown in Figure 7. SP's sea connections used maritime exchange model called the Lebanese Trade Network (LTN) which involved both direct and indirect exchange of products, know-how and cultural exchanges. The LTN, was a sophisticated system of culture, interconnections, moderately independent colonies which participated in the advancement of SP's mercantilism and economical evolution. A general overview is needed to understand the LTN that needs to present the relationships between SP colonies, the diversity and complexity in the LTN's structure. The LTN is critical for understanding the nature of SP's interactions and potential educational and economic relations. The sophisticated and complex LTN made CSs interrelated culturally, economically, and politically; that helped the evolution of a specific banking system (Puckett, 2012).



Figure 7. Trade routes of the ancient LTN (ACW, 2018).

### Banks and the Legal System

The Lebanese banking and financial environments attracted regional and international institutions to get closer to the immense Arab oil-based wealth, the petrodollar dividends of which were pouring into Lebanese banks, making Lebanon a major financial actor. Lebanon's hybrid financial environment includes Islamic finance, that faces the following challenges (Albawaba Business, 2014): 1) Many years after the introduction of Islamic banks in Lebanon and despite efforts by the Lebanese Central Bank to regulate Islamic finance, Sharia-compliant lenders have to adapt to the Lebanese complex banking sector; 2) Bankers and financial analysts interviewed by *The Daily Star* gave, concerning Islamic finance, said that they believed that it failed to make a mark in the Lebanese banking sector, and Ghassan Chammas, adviser to the board of directors of BLOM Development Bank, describes it as a black box... 3) Rima Turk Ariss, a finance professor at the Lebanese American University (LAU), argues that Islamic banking in Lebanon focuses on debt-based contracts, known as Murabaha and not on equity-based contracts; and these two approaches are hard to integrate; 4) Raed Charafeddine, the Central Bank's first vice governor, argues that Sharia-compliant banking's unpopularity in Lebanon, is because clients are not drawn to non-guaranteed deposits; and 5) The Lebanese Legal System (LLS) has implemented a pluralistic approach for banking that provides for both Islamic and conventional banks' well-defined integration processes, these efforts aim to strengthen the public's trust vis-à-vis Islamic banks. The complex Lebanese society is the enabler of the LSDES.

**Researched LSDES areas**

**The Foundation**

The LSDES draws its roots from Christian missionaries during the Ottoman occupation of Lebanon; where they founded two prestigious universities: Université Saint-Joseph (USJ), and the American University of Beirut (AUB). During the France’s presence, the French ES was adopted to improve the LSDES; and Baccalaureate was introduced and administered at the end of the secondary education phase. French is practically an official language and is used many courses in secondary education. Arabic, French, and English languages are commonly used in Lebanon and its LSDES.

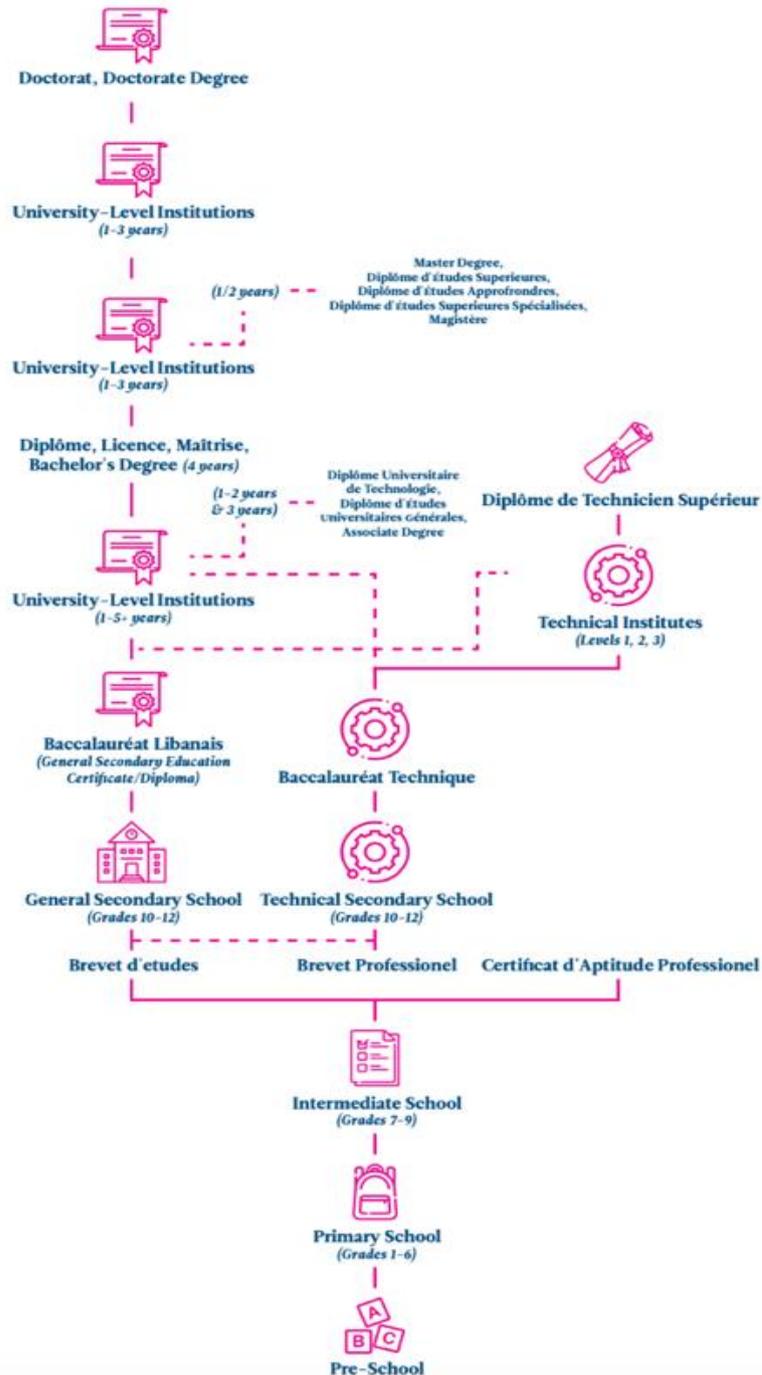


Figure 8. Lebanese Educational System (Holistic Think Tank, 2022).

At the independence in 1943, Lebanon reintroduced Arabic as an official language, and at the end of the civil war, the *Taef Agreement* tried to leverage the LSDES as a medium for Lebanon's identity and social cohesion. Based on the *Article 26 of the Universal Declaration of Human Rights enshrines the right to universal free primary education*, the Lebanese constitution gives the right to an education. As shown in Figure 8, the LSDES is centred around the MEHE, which manage public sector institutions through regional bureaus within each province. The Centre for Educational Research and Development (CERD) was launched under the responsibility of the MEHE. Its task is to draft high-quality curricula, make revisions, and prepare teaching methodologies (Holistic Think Tank, 2022).

### MEHE a High-Quality System

In the 19<sup>th</sup> century, in Lebanese cultural institutions, local and foreign intellectuals agreed to revive old SP traditions and to embrace and integrate modern cultures. At that moment seven main universities and schools were founded. Like the AUB, which was founded in 1866, and is today educating region's managers, leaders, and intellectuals. The LSDES provides a range of schools', where students can choose the language and educational orientation. Higher education in Lebanon is administered by the Ministry of Culture and Higher Education, which manages 41 private universities and a public one. Even though the official language of Lebanon is Arabic, the languages of instruction at <sup>2</sup>university levels is English or French, which shows its western cultural preferences. Twelve Lebanese universities feature in the *QS University Rankings: Arab Region 2021*. Eight of these leading Lebanese universities are also featured in the *QS World University Rankings 2021*. The Lebanese top universities year are (Topuniversities, 2022): 1) AUB, ranked 2nd in the Arab region and joint 220th in the world; 2) LAU, ranked 551-560 in the world and 19th in the Arab region; and 3) USJ, is ranked 19th in the Arab region and 541-550 in the world. The LSDES has profited from various cultural and religious communities that established religious private schools, and almost all private schools dependent on western staff, who propagated also ethical principles.

### Ethical Principles and The Mentality of Predators

Ethical principles should stop racism and anti-Semitism, where intentional apartheid discrimination towards foreigners and colored people, like in Switzerland, in which its ruling party, the Schweizer Volks Partie (SVP), a neo-Nazi like construct that uses 1933-like attitude; where even Europeans are considered as an inferior race (Maurisse, 2016; Miller, 2017; Le News, 2015, 2017).



Figure 9. The apartheid Swiss ruling party's poster (The Local, 2017).

Snowden declared: ...Switzerland is the most racist state in the world (Snowden, 2015), Racism based on the color of skin as shown in Figure 9; 6) SFFT related politicians, where convicted for major racist hate

crimes; and Christian Levrat, compares the ruling SVP to Nazi regimes (Tribune de Geneve, 2014); where the main aim is to plunder foreigners; 7) The latest major financial crisis' main and only winner is SFFT, who looted the invested capitals, that is based on the motto: ... when an Entity goes bad, collect its fortune from its fleeing and desperate immigrating population, like in WWII (Rickman, 1999;BBC, 2016), and they even stripped the belongings of the latest immigration waves, where the Swiss police actively took a part.



Figure 10. The apartheid Swiss ruling party's poster (The Local, 2017).

Besides racism their other forms of unethical behaviors like financial crimes. The Nobel prize winner, the British economist, Angus Deaton, warns about unethical predator's professionals graduating from business schools, which are behind major financial crimes and hence human tragedies. Leading schools with such a unethical perceptions are the Chicago school, and the Swiss HEC, and many others (Le Monde, 2019). Predator profiles can be classified as dangerous profiles who are the biggest threats to any Entity. Predators' only motivation is extreme cupidity which is destroying Europe's human, industrial, societal, and engineering capacities. Revelations of the Swiss Leaks affair, the Swiss HSBC condemned for tax avoidance shows the need for an evolution towards ethical banking and that future generations of students in finance, economics, and management, must be aware of ethical principles. An example of such ethical principles are (Murray, 1996): 1) Content competence, where a Professor maintains a high level of matter knowledge and ensures that his course's content(s) are feasible, ethical and appropriate; 2) Pedagogical competence of a Professor who communicates the main course's objectives; 3) Dealing with sensitive topics should be presented in an open honest and didactical manner; 4) In the student's development process the Professor should avoid actions like discrimination; 5) To, avoid dual relationships with students; 6) Confidentiality on student's information like are managed with confidentiality. The LSDES must consider the roles of corruption and organized financial crimes which have damaged severely Lebanon, by transferring all its richness to Switzerland (Stupples, Sazonov, & Woolley, 2019). And because of such misdeeds Lebanon is on the brink of starvation and its LSDES is facing collapse...



Figure 11. Fleeing Migrants.

Lebanon is destroyed and its human capital is humiliated and are fleeing as refugees as shown in Figure 11; where there are major dramas like a family with four kids drowned after that their belongings and banks accounts have been hijacked by Swiss bankers. LSDES, like all students around the world, are attracted to certifications, which makes it more difficult for *Entities*, especially in ICS disciplines.

### Education and Instructional Certifications

The main differences between these two disciplines are (Rob, & Roy, 2013): 1) Certifications attract hiring managers who suggest that certifications can replace traditional education; 2) Certifications have been integrated in some *Entity's* programs and there were difficulties because certifications are based on commercial tools; which is a very commercial and fast-education approach. And is not appropriate for ICS fields; 3) The unstable, siloed approach, frequent changing nature of certifications... 4) Certification programs can improve traditional lecturing and converge with standards, but can never replace ICS education which has a broader approach; 5) Nevertheless, students are attracted by certifications; 6) This can on the long-term, lock-in *Entities*, as AI and ICS tools come from a single mainstream; and 7) Certifications are superficial and can just assist a specialist and very experienced engineers, but an *Entity's* academic diploma stays essential, especially for profiles like the *Manager*. This dilemma can be simply solved by the following question: *Would anybody except to be operated by just a person having a commercial certification and does not have a real university surgeon diploma in medicine...?* The answer would be surely *No*. For the LSDED, the author recommends focussing on qualitative higher education, rather than quantitative certifications; and that reduces the risk of locked-in situations.

### Locked-in Situations and Vision

The LSDES must define rules and a vision in order to avoid locked-in situations, like in the following cases and situations: 1) Locked-in is defined as, *a situation where an Entity is unable to exit a position because of the regulations, or penalties associated with doing so* (Investopedia, 2017); 2) A strategy should recommend avoiding Locked-in situations, like GOFP or FinTech locked-in; and 3) A LSDES concept should avoid to adopt a unique tool (and ICS environment); and 4) An *Entity* should develop its own academic strategy and a continuous need to query the national context.

### The National Context

The Lebanese constitution permits communities to implement *Entities* and to diversify the LSDES. Foreign influences gave the LSDES its multicultural/multinational character reflecting Lebanese educational and cultural flexibility. Lebanese diversity shaped the LSDES, which also reflects deep sectarian divisions. *An ES is designated as weak, if it reinforces social fissures that can represent dangerous sources of conflict...* In Lebanon, since the 1920's the demand for learning was growing and the number of public *Entities* has strongly risen (El Khaled, Novas, Antonio Gázquez, García, & Manzano-Agugliaro, 2016).

Institute name	Acronym	Date founded
Phoenicia University	PU	2015
Matn University College of Technology	MUC	2014
Lebanese University	UL	1951
American University of Beirut	AUB	1866
Université La Sagesse	ULS	1875
Université Saint-Joseph	USJ	1875
Lebanese American University	LAU	1924
Académie Libanaise des Beaux-Arts <sup>1</sup>	ALBA <sup>1</sup>	1937
Middle East University	MEU	1939
Université Saint-Esprit de Kaslik	USEK	1950
Haigazian University	HU	1955
Beirut Arab University	BAU	1960
Conservatoire National des arts et métiers	Cnam	1971 (1794 in Paris)
Beirut Islamic University	BIU	1982

Makassed University of Beirut	MU	1986
University Of Tripoli	UT	1986
Notre Dame University - Louaize	NDU	1987
Jinan University (Lebanon)	JU	1988
University of Balamand	UoB	1988
City University Formerly (Manar University of Tripoli - MUT)	CityU	1990
Global University	GU	1992
American University of Science and Technology	AUST	1994
Lebanese National Higher Conservatory of Music	LNHCM	1995
Antonine University	UA	1996
Islamic University of Lebanon	IUL	1996
American University of Technology	AUT	1998
Arts, Sciences and Technology University in Lebanon	AUL	1998
Al-Kafaàt University	AKU	1999
Rafik Hariri University	RHU	1999
American University of Culture & Education	AUCE	2000
Lebanese French University of Technology and Applied Sciences	ULF	2000
Modern University for Business and Science	MUBS	2000
Université Sainte Famille	USF	2000 [2]
Lebanese International University	LIU	2001
Arab Open University	AOU	2002
Lebanese Canadian University	LCU	2003
Lebanese German University	LGU	2008
University of Sciences & Arts in Lebanon	USAL	2012
Al Maaref University	MU	2015
Azm University	AU	2015

Figure 12. The list of *Entities* or universities in Lebanon (Wikipedia, 2021).

LSDES' main characteristics are: 1) A multicultural construct which supports diversity; 2) Highly qualified academics; 3) A high level of literacy and social standards; 4) Represents all religious, political and ethnical groups; 5) Gives roles to foreign partners; 6) Instability and political violence; 7) Exceptional predispositions; 8) The role of geopolitical factors; 9) The role of finance; 10) Tourism and services; 11) Virtual education and é-learning capacities; and 12) The infrastructure. As shown in Table 9, the LSDES contains one public university, and the rest are 31 privates. Contrary to conventional social inequality in Lebanon, female percentages are extraordinary in all educational levels and can be envied by many north European nations; equality is mainly based on education and not only material features (El Khaled, Novas, Antonio Gázquez, García, & Manzano-Agugliaro, 2016). The public *Entity* or the *Université Libanaise (UL)*, was founded in 1967 and has various branches in Lebanon; and uses Arabic, French and English.

### The Lebanese University

The UL was first mentioned in the speech of the former Minister of Foreign Affairs, Hamid Frangieh in the ceremony at UNESCO, held in Beirut in 1948. In the year 1951 the UL was created. It has been headed by well-known personalities like: Dr. Edmond Naim, Dr. Boutros Dib... The most recognized faculties and branches are Faculty of Sciences, Faculty of Pedagogy, Faculty of Engineering... The UL is affiliated with the Institute of Applied Sciences and Economics (CNAM-ISAE), which operates in France (UL, 2018). Until the year 1975, UL's institutes were in the Philistine stronghold or what was known as west-Beirut, which was dangerous for the Christian population and other minorities. Then a parallel UL (or UL II) was created in east-Beirut by Dr. Elie Trad and Said El-Boustany, who were supported by the Lebanese Front. In a short period the UL II became a well-known and credible *Entity*. Today the UL has many sections in the governorates of Mount Lebanon, North Lebanon, South Lebanon and Bekaa. The UL is a central *Entity* in Lebanon always having a high number of students, in some years passing 80,000 students, which makes it the largest and most important University in the MEA. As Lebanon's SP heritage suggests a confederal mentality and therefore its *Entities* like the UL has to be decentralized, where each

CS manages its own branch, which can imply that some decentralized governates like *Mont-Liban* can become much closer to the French and European models; while others can link to Syria, Russia, and Iran.

### The French and European Model

Lebanon's Catholics (Maronites and Jesuits), were the first to establish religious schools, and afterwards it was followed by Presbyterian missionaries, Greek Orthodox and Armenians... To produce a large network of French *Entities*; and the most known is USJ, established in 1877. The most known French schools are: 1) Mont La Salle; 2) Lycée Charlemagne; 3) Lycée de Ville; 4) Collège Protestant Français ; 5) Antonine International School; 6) Collège Louise Wegmann ; 7) Collège Melkart; 8) Lycée Français; and others. The most prestigious French universities are: 1) Notre Dame University (NDU), is a non-sectarian Catholic University, which offers many undergraduate & graduate degrees; 2) La Sagesse University, is a nonsectarian Catholic University and belongs to the archdiocese of Beirut; 3) University of Balamand, is a non-Sectarian Greek Orthodox university; 4) Université Saint Esprit Kaslik, is a non-sectarian Catholic University; and 5) USJ, which Offers diplomas in a very wide range of areas. There are also many European schools and the most important one is the German International School Beirut. Another very popular model is the Anglo-Saxon model.

### The Anglo-Saxon Model

The most known schools are: European Lebanese, Lebanese American, Lebanon Evangelical, ALLC International House, Brummana High, and Eastwood College. The most prestigious *Entities* are: 1) AUB which operates under a charter from the State of New York, and it offers programs leading to both the Bachelors and Masters degrees; 2) Haigazian University, was founded in 1955 by the Union of Armenian Evangelical Churches; and 3) LAU, formerly the Beirut University College (BUC). The westerns models are challenged by the Arab model.

### The Arab Model

This model is marginal and has mainly the Makassid network of schools, established by Islamic nations and the Beirut Arab University, which offers a large set of programs. All these models can deliver profiles which can cope with complex projects.

### Profiles for Complex Projects

Complex projects need a specific *Manager's* profile, and the LSDES offers such possibilities; like in the case of late Rafic Hariri who was responsible for the implementation of a very complex renovation project which was the reconstruction of Byrut city. Hariri was the Prime Minister of Lebanon he was credited for his role in ending the by civil-war and played a huge role in reconstructing Byrut. Unfortunately, he was assassinated by the Iranian Hezbollah members... And what would be the role of ICS in such *Entities*.

### The role of ICS in entities

#### The Role of Finance and Technology

ICS has transformed Financial and Technology (FinTech) and improved educational capabilities. The LSDES must be transform its curriculum to include (Buttice, 2020): 1) *Fraud Detection and Compliance*; 2) *Improving Customer Support*; 3) *Preventing Account Takeovers*; 4) *Next-gen Due Diligence Process*; 5) *Fighting Against Money Laundering*; 5) *AI Data-Driven Client Acquisition*; 6) *Computer Vision and Bank Surveillance*; 7) *Easing the Account Reconciliation Process*; 7) *Automated Bookkeeping Systems*; 8) *Algorithmic Trading*; 9) *Predictive Analytics and the Future of Forecasting*; and 10) *Using EA, online services....* The facts related to FinTech's ICS skills, are: 1) *Radical Transformation Process*; 2) Logging media; 3) Automated financial processes; 4) Automated transactions; 5) Cybersecurity; 6) Digital banking; and 7) To use ICS in a cross-functional EA.

### LSDES Main ICS Profile-A Manager as a Cross-Functional EA

*Manager's* curriculum can include following subjects (Trad, & Kalpić, 2014a, 2014b): 1) Knowledge in national-International law and governance; 2) EA and business architecture; 3) Enterprise holistic skills; 4)

Business modelling skills; 5) Business integration; Strategic planning; and services modeling, etc... 6) AI and data models; 6) Automated process environments; 7) Agile Project Management (APM); 8) ICS implementation know-how; and 9) Virtual Group Work (VGW).

### The VGW

The VGW supports students' group work in the context of a project and is based on existing standards, methodologies, local specificities, and traditional educational practices. Complex educational topics need VGW to integrate agile collaboration, educational patterns, best practices, and educational services' management. Agile coordination generates various types of problems, that are difficult to solve and which can disturb the LSDES processes. VGW's limitations are the *Entities'* capacities to restructure their environments; and integrate avant-garde technologies in all their departments; that needs a specific type of staff (Trad, 2022a). This paper is supported by a set of Applied Case Studies (ACS) for the PoC.

### The ACSs and the PoC

The PoC has ACSs, which are combined to cover aspects, where central one is the ICS, which is presented in the Open Group's case. The used ACSs are suitable because they integrate cross-functional domains and where CSFs are measurable by the HDT. In each ADM iteration, the *Project* is evaluated. These ACSs are (Trad, 2022a): 1) The case of educational institutions in Australia which wanted *flexible delivery* as a panacea for encountered problems; because the response to massive education needs the integration of diverse student groups (Postle, 2003); 2) Complex ICS environments pose challenges for *Entities*, which have to be capable of delivering VGW based courses (Sagheb-Tehrani, 2009). The ACSs are associated with the RDP and PoC.

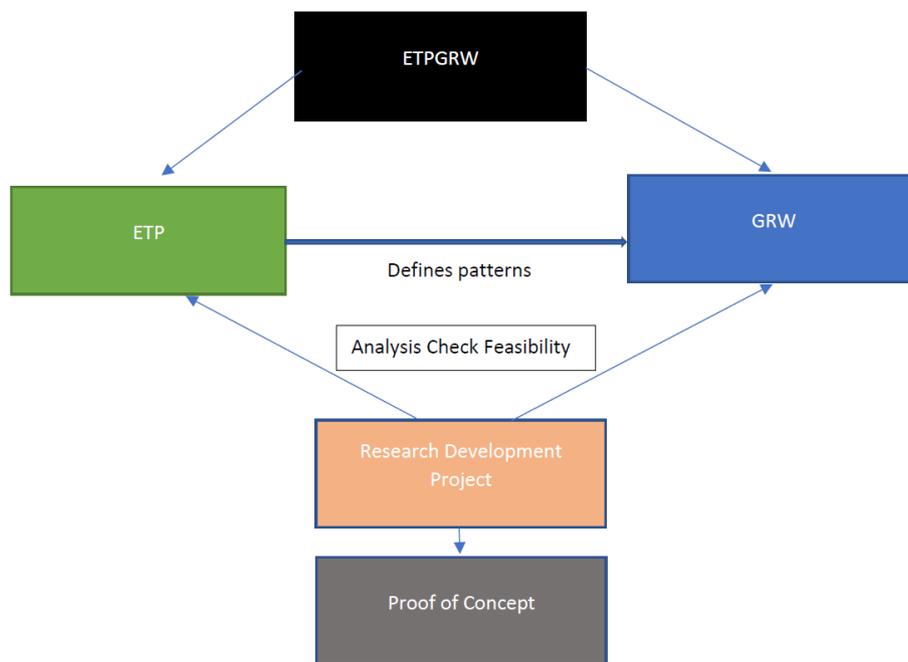


Figure 13. The relation between the LSDESVGW and the RDP.

The LSDESVGW supports the *Project*, the use of avant-garde technologies, and to interface standards, like TOGAF, Schools Interoperability Framework (SIF)... (Service Architecture, 2022). This paper shows that the LSDESVGW needs holistic cross-functional capabilities and as shown in Figure 13, the LSDESVGW can be used by the RDP that is based on the ADM (The Open Group, 2011a). The LSDESVGW needs to be assisted by the DMS4DSLES and KMSVGW to solve various types of problems. *TRADf's* interactions include the following components: 1) ICS components integration; 2) DMS4DSLES; 3) KMSVGW; 4) LSDESVGW; 5) RDP; and 5) Offers VGW Educational Patterns (VEP) based ES or cloud.

### The VEP based Educational System/Cloud

In order that the *Entity* stays competitive, it must coordinate security, data, business, and integration activities (Tiwari, 2017). Major technical ICS problems like security, availability, unreliable access, and the lack of support, can damage the LSDES and that prevents *Entities* to deliver. The Cloud offers advantages in these domains (Pappas, 2022; Trad, 2022a). VEPs can be applied in the Cloud, like the, like the student's collaboration pattern. In domains related to education in ICS topics, Professors need to integrate challenge based and VGW collaboration projects to enhance learning processes. The successful use of VEPs to improve students' ability to work in virtual teams. In challenge-based learning, Professors participate as project managers, where they provide support for the project's progress. Professors must continuously improve teaching concepts as tasks progress. Challenge-based education, students work on a concrete case study, in which they trace their project tasks (Pisonia, Gijlersc, Nguyend, & Chene, 2021). The complex activity of interconnecting the *Entity's* educational processing nodes, is extremely complex, and in general it causes major resistance from the staff and students. But to avoid such scenario(s) the use of VEPs can bring enhancements. The *Entity* has to implement a platform to support video interactive collaborations. For that there is a need to identify the needed Online Collaboration Patterns (OCPs) to be in video-based practices. OCPs support interaction using collaboration technologies (Pea, & Lindgren, 2008). VEPs can support and enhance the VGW.

### VEP based VGW

VGW skills are essential for ICS engineers and should be included in the *Entity's* curricula, to support students in acquiring virtual team techniques and skills. During VGW activities, problems happen, due to a set of conditions, like unstable group constellations or lack of instructor's guidance. Students have to find strategies for solving these VGW problems. VEPs offer a way of supporting students by providing problem-solving strategies, which in general have to be tested. VEP can be applied in an interdisciplinary ICS engineering project. VGW forms the main part in ICS engineering education.; the ACM/IEEE CS Curriculum Guide 2013, explicitly includes VGW/teamwork, communication, time management, and problem-solving skills as part of the *software engineering and social issues* and *professional practice knowledge*. These skills are often included in curricula of students' VGW projects, ranging from small to larger ones. Reports on what makes projects manageable and successful include CSFs like, essential Professor's guidance. But important Professor guidance needs time and can lead to that the Professor solves their problems. Where Professors' role is to support students to be able to acquire skills autonomously. That is achieved using VEPs for communicating known collaboration scenarios, to impact positively on the acceptance of VGW. This paper's section refers to an external student's project, which was an interdisciplinary ICS/software engineering project at Radboud University Nijmegen, which included third year undergraduate students of the ICS and AI curricula. There were nine groups of six students each, a total of 54 students, where each group had different ICS and AI project. These projects architecture and the requirements tasks were developed by other student groups from other courses. The resulting ICS and AI solutions were delivered to external real-life Clients. VGW collaboration, like participating in VGW activities and achieving project's results in a collective manner, was a strategic educational goal. At the project's initiation the used collaboration VEPs were presented to the students and templates were provided to apply these VEPs. The students were continuously informed virtual collaboration was a strategic educational goal and that it's an important element of their final written exam. When necessary, the Professor referred to the collaboration VEPs and how can they be applied; that was done using specific didactics. This section is considered an ACS and used in the PoC (Koppe, van Eekeleny, & Hoppenbrouwersz, 2015). The VEPs supports ICS creative design activities.

### ICS Architecture, Design, Development Activities and Creativity

ICS architecture, design, development activities (simply *Dev*) and creativity is an important CSF in education and a crucial competency for ICS professionals. VGW is used in *Dev* education, and many research studies showed the advantages of applying VGW in *Dev* which enhances collaborative capacities, knowledge, and skills. Although the benefits of VGW in *Dev* education are evident and it outperforms individual work. *Dev* Professors employ both VGW and individual work to complement each other in their courses. Creativity is the basis of human intelligence and is a significant CSF in *Dev* related problem-

solving, innovation possibilities, ... It is defined as *the process by which something so judged, the production of novel, useful products, and the ability to imagine or invent something new of value*. Creativity is one of the top five competencies needed for *Dev* professionals and EA specialists, who are optimal for the *Manager's* profile (Han, Park, Hua, & Childs, 2021). The main benefits include that it improves *Dev* students' abilities and skills in communication, decision making, VGW based management, interpersonal dynamics, ... These *Dev* skills is not discipline-specific but are transferable that benefits continuous learning. Creativity has a significant role in EA and can be applicable in all it phases, including the central detailed design phase. Individual students are more creative and perform better in VGW especially in interactive brainstorming activities. VGW based creativity can be applied to design classes that can involve the following activities: EA brainstorming, Lateral Thinking, *Manager* Mind Mapping, Six Thinking Hats, Strength, Weakness, Opportunity and Threat (SWOT), UML, ADM, ... *Dev* creativity environments can used for massive education; to achieve that the *Entity* has to improve its ICS didactics (Cress, Moskaliuk, & Jeong, 2016).

### Improving ICS Ddidactics

ICS education especially as a subdiscipline of pedagogy and technology, addresses the large impact of ICS in the business eco-system through its intersection with: Business, AI, computer sciences, leadership, data processing, natural sciences, and mathematics. In comparison with other types of education, ICS is a new field. Its evolution started in the 1940s, and ICS didactics focuses on the implementation of *Dev* teaching resources and for the apprehension of ICS education, there is a need for didactics to create complex concepts, like Bitcoin Block-chain Automation.

### Block-chain Automation

A block-chain is an ICS model that that permits business partners to commit business transactions and to share trace information of all transactions; and it offers secure: 1) Contracts; 2) Physical and digital property; 3) Equities; 4) Government bonds; and many other types of business/financial operations. Secure peer-to-peer protocol supports e-payments in all block-chain's nodes; which needs VGW skills; and inthis RDP offers a set of LSDES recommendations that are based on the PoC.

### The proof of concept

The PoC is implemented using *TRADf* and uses CSAs including the *Handle Claim Process* that comes with the *Archi* tool (Beauvoir, & Sarrodie, 2018; Jonkers, Band & Quartel, 2012); the first phase was the varication of the literature review's outcome.

### The Literature Review's Outcome

The literature review outcome confirmed RQ's credibility based on the references and sources. The already mentioned ACSs based on various types of ICS for education, education services, end students' service department; and the goal is to show the possibility that *Project* can transform an *Entity* and *Dev* education, where the first step is to rationalize its educational portfolio scenario.

### Educational Services Portfolio Rationalisation Scenario

The PoC selected the sets of CSAs and CSFs to satisfy *Project's* requirements; where the ACSs map to the *Entity's* strategic goals. The ADM phases, are: 1) In EA's Phase A or the Architecture Vision phase, to setup the *Dev's* educational roadmap; 2) In Phase B, it needs to setup *Entity's* target architecture and the set of *Dev's* educational requirements; 3) In Phase C or the Gap Analysis phase, there is a need for modelling a target *Dev's* educational infrastructure landscape; 4) Phase D or the Target Technology Architecture and Gap Analysis phase needs the final *Entity's Dev's* educational design capacities; 5) In Phases E and F, Implementation and Migration Planning to evaluate the *Project's* status. *Project's* capabilities to support the PoC's execution process.

### PoC's Execution

The PoC creates an AHMM4LSDES's instance which uses the selected sets of CSFs which are presented and evaluated in Table 1.

CSA Category of CSFs/KPIs	Transformation Capability	Average Result
RDP's INTEGRATION	Usable-Mature	From 1 to 10 9.0
THE METHODOLOGY	Transformable-Possible-Mature	From 1 to 10 9.0
DMS4LSDES/KMS4LSDES	Transformable-Possible-Complex	From 1 to 10 8.00
THE HISTORICAL HERITAGE AND THE GEOPOLITICAL CONTEXT	Credible-Complex	From 1 to 10 8.00
BYRUT AS AN LSDES HUB	Credible-Complex	From 1 to 10 8.00
RESEARCHED LSDES AREAS	Credible-Complex	From 1 to 10 8.00
THE ROLE OF ICS IN ENTITIES	Implementable-Complex	From 1 to 10 8.00

Evaluate First Phase

Table 1. The *Project* RDP's outcome is (rounded) 8.20.

The required ICS skills have mappings to specific CSFs and the used micro artefacts are designed using EA, and VGW and VEP. The *Project* defines relationships between the LSDES main VGW and VEP artefacts like the set of ICS educational requirements. The PoC uses the *TRADf* client's interface, where the starting activity is to setup CSAs and CSFs. After that the setup interface was activated, the scripting interface was launched to implement the needed VEP and VGW Micro artefacts to process the defined CSAs. The sets of CSFs are linked to a specific node of the HDT and the existing VEP and VGW Micro artefacts. The scripts link the AHMM4LSDES instance to the set of actions that are processed in the background. The AHMM4LSDES-based HDT uses services that are called by the DMS4LSDES actions. The *Project* instance and its related CSFs, VEP and VGW actions, were setup to be used; then the scripts were launched. AHMM4LSDES's main constraint to implement the *Project* is that CSAs for simple *Entities* components, having an average result below 8.5 will be ignored. In the case of the current CSF evaluation an average result below 7.5 will be ignored. This work's conclusion with the result of 8.20 implies that *Project's* integration is very complex but feasible, where the initial phase should try to integrate the *Dev's* curricula .and there is need to follow the recommendations.

### Conclusion and recommendations

The LSDES is a high-quality confederal system which is optimal for providing multilingual/multiculturalism, and cross-functional skills for complex *Projects*; but Lebanon's geopolitical situation is precarious. The Lebanese human resources are its primal asset which is unlimited, and that can be used for complex challenges by delivering *Manager* profiles. The RDP's empirical phase proved that the RQ is credible and delivers an optimal *Manager* profile. The most important recommendations are:

*TRADf* is used to implement the *Project* and the literature review acknowledged a knowledge gap; and delivers a set of recommendations.

The RDP uses the AHMM4LSDES's HDT for solving problems.

This RDP confirms the need for a *Manager's* educational curriculum.

*Entities* can hardly cope with heterogeneous complexity, which is due to the hyper-evolution of AI, EA, and ICS. To deliver *Manager* profiles *Entities* need *Dev* knowledge and needs an optimal VGW and VEP concepts.

The staff must be capable of implementing VGW and VEP concepts.

The LSDES is optimal to deliver *Manager's* profile.

The *Manager's* profile includes Extensive training, aware of locked-in and GOFP situations, Capacities in building holistic strategies, and *Dev* hands-on skills.

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# What drives Indian MNCs overseas investments-developing economy perspective

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## Keywords

Governance quality; OFDI; World Governance Indicators; Tobit; Gravity equation

## Abstract

*The research reviews the host nation's governance quality (GQ) and locational determinants' roles in attracting Indian overseas investments. Findings reveal that strategic asset-seeking and market-seeking motivations primarily influence Indian investors' overseas investment decisions. When seeking investments in developed nations, Indian MNCs prefer weak governance similar to that in their home country. On the other hand, Indian MNCs prefer developing nations with strong GQ (except for weak voice and accountability) for both market-seeking and strategic asset-seeking investments.*

## Introduction

With foreign direct investment (FDI) becoming an increasingly vital source of national growth, countries have been racing to strengthen their governance quality (GQ) and investment attractiveness (Demir, 2016; Munjal et al., 2022). Several factors influence the association between good governance and FDI. The nation's overall GQ improves the locational advantages for multinational companies (MNCs) by creating a favorable investment environment with lower transaction costs. Prudent rules and regulations, governmental policies safeguarding investors' property and civil rights, and law enforcement, among others, are critical governance factors that substantially ease investments by reducing transaction costs (Othman, 2022). To stimulate innovation and exports, governments in developing countries have recently shifted focus from restrictive to supportive OFDI policies (Perea & Stephenson, 2018). Scholarly literature on OFDI from developing countries and its relationship with the host nation's governance climate is limited due to the topic's infancy and a lack of data (Park & Lee, 2021). In the recent past, nations have been significantly emphasizing improving their GQ to attract FDI, and the present study investigates OFDI from an emerging economy, India.

The study examines the regional motives of Indian MNCs using Dunning's eclectic paradigm (1988) with extended locational factors and North's institutional theory (1990). The study hypothesizes that the domestic experience of Indian firms operating in a continuously improving governance climate should be reflected in their investments in better-governed nations. Hence, the paper asks if the GQ of the host economy affects the locational preference of Indian OFDI in either of the regions. The study employs augmented gravity specifications in panel data settings to examine the regional impact of host economies' GQ as denoted by World Governance Indicators (WGI). While this is the primary focus, additional determinants are incorporated to further investigate Indian MNCs' OFDI motivations. Furthermore, to examine the diverse investment pattern of Indian MNCs across developed and developing economies, the study comprises OFDI data from 15 developed and 25 developing economies from 2008-2018. The study employs the Tobit model with a left censoring limit of zero to evaluate the gravity model framework.

Our findings suggest that, while pursuing market and strategic intent, Indian MNCs prefer robustly governed developing countries. MNCs prefer developed countries with a robust GQ when seeking strategic assets, whereas they prefer nations with a relatively weaker GQ when pursuing market-seeking investments.

## Theoretical Background

Emerging Asian nations have accounted for 10% of offshore investments since the 1990s, up from 1%. Before 2012, developing nations were the top investment destination for Indian MNCs abroad; however,

since 2012, the preference has significantly shifted in favour of developed nations. The emerging nation's emphasis on GQ may have led to this structural investment move from developing to developed, highlighting an institution-based perspective (Peng et al., 2009). This poses two critical questions: what are the potential motivations of Indian OFDI in developed and developing economies, and which FDI theories may explain its emergence?

The study aims to investigate the determinants of Indian MNCs' overseas investment based on Dunning's (1977) ownership-location-internalization (OLI) framework, which provides the most comprehensive foundation to analyse why and where MNCs would invest abroad. The framework suggests that MNCs' OFDI decisions are driven by their capability to internalize (I) firm-specific ownership (O) advantages in conjunction with locational (L) advantages offered by the host country. MNCs' motivations and location advantages, like low production costs, natural resources, market size, and strategic assets, explain locational investment choice (Dunning, 1993). MNCs prefer to invest in the best possible overseas location. Regional assessments highlight locational benefits (Hintošová, 2021), as regional countries often share similar cultures, political and economic systems, and levels of development.

International business scholars have conducted extensive empirical research exploring the relationship between governance or institutional characteristics and FDI. Institutions, as characterized by North (1990), are either "game rules" or "human-made constraints". The institutions intend to create a stable atmosphere by establishing a consistent framework based on human interaction norms. Classification by North (1990) identifies formal institutions as explicit community norms that define a country's general business environment, such as property rights protection laws and contract discipline, among others. In contrast, informal institutions refer to limits people place on themselves to structure their relationships, such as customs, rituals, religion and language.

The study develops nine hypotheses to investigate how governance and locational factors influence India's OFDI location choice across developing and developed economies.

### **Hypothesis and Methodology**

The paper uses an augmented gravity framework (Tinbergen (1962) & Poyhonen (1963) to analyze the influence of locational factors and governance quality on India's OFDI. The sample consists of 15 developed and 25 developing nations. According to the UN classification, the RBI's FDI inflow data from 2008 to 2018 are classified as inflows from developing or developed countries. The study does not consider efficiency seeking motivation, which is largely driven by the cost effectiveness factor, presuming the production cost to be relatively low in India, being a developing country itself.

The study employs the WGI's (Kaufmann et al., 1999) six metrics—control of corruption (CC), voice and accountability (VA), political stability (PS), regulatory quality (RQ), government effectiveness (GE), and the rule of law (RL) to assess GQ of a nation. Due to the multicollinearity between these indicators, the study examines them in separate models.

CC assesses corruption among public and private authorities, the illicit acts of bureaucrats, and the level of bribes. Government corruption jeopardizes foreign investment by creating market inefficiencies and high operational expenses for MNCs (Lestari et al., 2022; Aba, 2021). GE evaluates the quality, freedom, and credibility of bureaucrats and governmental policies and protects foreign investors from discretionary governmental decisions. PS indicator reflects government stability in the nation. Stable political regimes strengthen a conducive business climate and attract investors. RQ measures the state's authority to develop and enforce strict rules and legislation that aid private sector growth. Excessive market regulation and government intervention jeopardize investments. RL evaluates issues such as the efficacy and reliability of the judicial process, contract enforcement mechanisms, and the likelihood of offence. A robust judicial framework boosts investors' confidence (Contat, 2021). VA measures the citizens' ability to exert control over government activities, and political processes, among others. VA encourages investors by demonstrating a participatory and dependable political system and bolstering democratic institutions. As the importance of GQ in creating a conducive business climate for MNCs cannot be overstated, the following study hypotheses:

H1: Indian MNCs prefer to invest in countries (across both regions) with robust GQ depicted by all six WGI.

The joint GDP of the host-home nation ( $GDP_{joint}$ ) from the WB database captures the horizontal market size and corresponds with Dunning's (1980) market-seeking motivation. Market-seeking investments generally target economies with bigger markets (Cieřlik & Gurshev, 2022). The study hypothesizes:

H2: Indian MNCs prefer to invest in countries (across both regions) with bigger markets.

The desire for natural resources significantly drives major overseas investments (Dunning, 1993). The global race for resources has intensified due to surging international raw material prices and fast-paced economic growth. MNCs generally engage in resource-seeking investments to acquire locally bound natural resources (Alshareef, 2022). Natural resources are represented by the ratio of metal and ore exports to merchandise exports. Indian corporations have boosted their resource-seeking investments in developed and developing countries, such as IOCL in Abu Dhabi, Gabon, Nigeria, and Canada and Reliance India Limited in the U.S. (Sanjeev et al., 2022). Therefore, we hypothesize:

H3: Indian MNCs prefer to invest in countries (across both regions) with available natural resources

The total patents and trademarks ratio to population captures the host nation's technological proficiency and represents available strategic assets (SA). Throughout the study, developed (high-technology) and developing nations (low- to medium-technology) have significantly attracted Indian investments. Hence, the study hypothesizes:

H4: Indian MNCs prefer to invest in countries (across both regions) with available strategic assets

Trade openness (TO), represented as a ratio of total exports plus imports to GDP, reflects the country's generous trade policies and is an attractive proposition for investors (Udeagha & Ngepah, 2022). Literature suggests a positive relationship between trade openness and FDI, especially market-seeking FDI (Boęa, 2019; Kamal et al., 2018). Free-trade setting aids potential foreign investors in gaining insight into the host market dynamics. The study thus hypothesizes:

H5: Indian MNCs prefer to invest in countries (across both regions) with significant trade liberalisation (openness).

The study considers the average (per 100 people) fixed broadband and mobile phone subscriptions in the partner nation as a measure of good telecommunications infrastructure. In concurrence with Camarero et al.'s (2020) findings, the study assumes that good infrastructure, in terms of a worldwide network and mobile connectivity, positively boosts FDI by reducing business expenses. The study hypothesizes that,

H6: Indian MNCs prefer to invest in countries (across both regions) with good infrastructure

Since Hartman's (1985) pioneering work, tax implications on FDI, proxied by the tax rate expressed as a % age of commercial profit, has been widely employed in empirical investigations. The OFDI channelled through offshore financial canters for tax reasons is not part of our sample study. Foreign investors seek to enhance their earnings after tax by transferring their investments to countries that offer more tax benefits (Ślusarczyk, 2018). The study hypothesizes that,

H7: Indian MNCs prefer to invest in countries (across both regions) with lower tax implications.

The distance variable representing the geographical distance between partner nations is a proxy for transportation and operational costs. The study presumes that greater distance may deter investors owing to the higher cost of accessing relevant information and challenges in managing affiliates in distant regions (Li, 2020; Antunes et al., 2019). Thus, the study hypothesizes,

H8: Indian MNCs prefer to invest in countries (across both regions) with geographical proximity.

The study also uses dummies for common land boundaries (Contig) and common language (ComLang) to examine cultural proximity as a determinant of FDI. The dummy variable represents one if the partner nations have a shared land border or speak the same language. The study hypothesizes that,

H9: Indian MNCs prefer to invest in countries (across both regions) with cultural proximity.

### Model specification

The study uses the panel Tobit model (censored normal regression). Tobit estimators prevent data structure bias by ignoring zero values. Tobit regression analysis uses maximum likelihood estimation since LS regression to produce consistent estimators of the parameters.

Our regression model is as follows:

$$OFDI_{ij} = \beta_0 + \beta_1 \ln GDP_{joint_{ijt}} + \beta_2 \ln Tax_{jt} + \beta_4 TO_{jt} + \beta_3 \ln patents + \beta_4 \ln metals + \beta_5 RQ_{jt} + \beta_6 \ln infra + \beta_7 Distcap_{ijt} + \beta_8 Contig + \beta_9 ComLang + \delta_t + \theta_t + \varepsilon_{ijt}$$

where  $OFDI_{ijt}$  is overseas foreign investment from home nation  $i$  to host nation  $j$ , sourced from RBI overseas investment database.

$\ln GDP_{joint_{ijt}}$  (Market) is the host -home countries total GDPs retrieved from WB.

$\ln Infra_{jt}$  represents telecommunication infrastructure as proxied by the average mobile and broadband connectivity per 100 people, retrieved from WB.

$\ln Tax_{jt}$  is the tax rate in the host economy, retrieved from WB.

$\ln metals$  signifies natural resources, the ratio of ores and metals exports as a %age of merchandise exports, retrieved from WB.

$\ln patents$  signifies strategic assets, total patent and trademark applications filed by host nation's residents as a % age of total population, retrieved from WB.

$TO$  is trade openness of the host country, the ratio of exports plus imports as a %age of host nations GDP, retrieved from WB.

$\ln distcap_{ij}$  is the distance between home-host nation, retrieved from CEPII.

$ComLang$  is a time-invariant variable with value 1 if home-host nation shares official language, otherwise 0, retrieved from CEPII.

$Contig$  is a time-invariant variable with value 1 if home-host nation shares common border and otherwise 0, retrieved from CEPII.

$GQ_{jt}$  encompasses of governance quality variables represented by World Bank's six governance indicators, examined individually across six models.

$\delta_t$  signify a group of year dummies capturing time fixed effects

$\theta_t$  signify a group of host country dummies capturing host country fixed effects

$\varepsilon_{ijt}$  is the error term of the estimation

### Results and Discussion

The 60-host country sample is divided into 15 developed and 25 developing economies based on UNCTAD's developed and developing nation classifications, which may otherwise result in biased estimation due to diverse regional specifications (Saikia, 2022; Busse & Hefeker, 2007). Depending on the overseas investment destination, specific elements such as the market size or governance climate may have opposing effects (Nuruzzaman et al., 2020).

The summary statistics and correlation matrix are reported in Tables 1 and 2. The Tobit estimations based on the country classification, i.e., developing and developed economies, are shown in Tables 5 and 6. The study employs time FE in the panel data settings. It eliminates omitted variable bias by controlling for time-invariant, unobserved characteristics that evolve but are constant across entities. The independent variables' interaction with time dummies allows for measuring Indian overseas investors' locational determinants over time. Country-fixed effects are not used in this analysis since they eliminate significant variation in the variables of concern. We propose estimations without country FE because most variations are between nations (Nunnenkamp et al., 2012).

Table 1: Summary Statistics

VARIABLES	OBS	MEAN	STD. DEV	MIN	MAX
LNOFDI	440	3.12	2.06	0.00	9.29
LNGDP <sub>JOINT</sub>	440	28.51	0.44	27.82	30.44
TO	440	0.54	0.73	0.00	4.11
VA	440	0.25	1.08	-2.20	1.67
PS	440	-0.01	1.00	-2.80	1.62
RQ	440	0.45	0.99	-2.24	2.26
RL	440	-0.40	1.02	-1.89	2.12
CC	440	-0.36	1.11	-1.67	2.25
GE	440	0.50	0.98	-1.62	2.44
LNTAX	440	3.60	0.474	2.42	4.72
LNDISTCAP	440	8.41	0.537	6.91	9.56
LNINFRA	440	4.06	3.36	-0.97	5.03
LNNRES	440	1.41	1.07	0.00	4.41
LNSASSETS	440	7.97	3.86	0.00	15.96

Table 2: Correlation Matrix

	LnGDP <sub>j</sub>	TO	Indiscap	Intax	Lninfra	LnNres	LnSA	VA	PS	RQ	RL	CC	GE
LnGDP <sub>joint</sub>	1												
TO	0.594	1											
Indiscap	0.239	-0.011	1										
Intax	0.346	0.046	0.343	1									
Lninfra	0.242	0.145	0.178	-0.075	1								
LnNres	0.153	0.067	0.034	0.128	0.086	1							
LnSAssets	0.236	0.012	0.085	0.321	0.151	0.125	1						
VA	0.113	-0.223	0.624	0.289	0.403	0.098	0.387	1					
PS	0.121	0.095	0.444	-0.175	0.556	0.165	0.227	0.645	1				
RQ	0.128	0.085	0.445	-0.102	0.632	0.067	0.256	0.759	0.873	1			
RL	0.154	0.072	0.439	-0.097	0.595	0.095	0.27	0.758	0.883	0.963	1		
CC	0.162	0.107	0.413	-0.146	0.532	0.028	0.22	0.72	0.854	0.938	0.973	1	
GE	0.195	0.153	0.433	-0.099	0.601	0.061	0.228	0.722	0.858	0.963	0.969	0.983	1

Our estimates for developed and developing regions in Tables 3 and 4 find partial support for H1. For the developed nation category, all six WGI in Model 1 2,3,4,5,6 (Table 3) indicates negative coefficients; however, VA and RQ, unlike other WGI, did not reach the expected significance level. Findings suggest that Indian foreign investors prefer developed countries with relatively weak IQs similar to those in their home country. The considerable variation in countries' governance characteristics hinders a firm's coordination. The host market's regulatory circumstances hinder MNCs' ability to synchronize worldwide processes and compete with other multi-market firms (Luo & Bu, 2018).

Table 3: Tobit Estimation (Developed Nations)

	VA	PS	RQ	RL	CC	GE
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>ln(GDPjoint)<sub>ijt</sub></i>	0.936** (0.403)	0.465** (0.421)	1.1047*** (0.446)	1.119*** (0.432)	1.190*** (0.418)	1.257*** (0.433)
<i>TO<sub>jt</sub></i>	0.845*** (0.277)	0.608** (0.266)	1.070*** (0.278)	0.759*** (0.269)	0.616*** (0.268)	0.476*** (0.302)
<i>lnNRes</i>	-0.658** (0.235)	-0.486* (0.291)	-0.580*** (0.229)	-0.693*** (0.236)	-0.421*** (0.231)	-0.707*** (0.236)
<i>lnSAssets</i>	0.555** (0.273)	0.843*** (0.240)	0.560** (0.268)	0.564** (0.268)	0.659** (0.275)	0.620** (0.273)
<i>lnTax<sub>jt</sub></i>	-0.656 (0.539)	-0.895** (0.505)	-0.096 (0.512)	-0.186 (0.528)	-0.342 (0.566)	-0.285 (0.556)
<i>lnInfra</i>	-4.558*** (1.154)	-2.522** (1.071)	-4.577*** (1.034)	-4.983*** (1.003)	-3.999*** (1.094)	-4.589*** (1.147)
<i>ComLang</i>	3.462*** (0.300)	2.849*** (0.389)	3.298*** (0.331)	3.372*** (0.320)	3.379*** (0.320)	3.292*** (0.334)
<i>lnDistCap<sub>ijt</sub></i>	-2.950*** (0.545)	-2.319** (0.341)	-1.68*** (0.333)	-1.588*** (0.340)	-1.652*** (0.374)	-1.565*** (0.323)
<i>Ins.Qty<sub>jt</sub></i>	-0.375 (1.085)	-1.80*** (0.416)	-0.383 (0.608)	-0.871** (0.356)	-0.811*** (0.322)	-0.839* (0.465)
<i>Constant</i>	-16.431** (14.122)	-12.535** (11.154)	-22.810** (12.873)	-20.170*** (13.708)	-20.162*** (15.331)	-16.690*** (14.802)
<i>Observations</i>	165	165	165	165	165	165
<i>TF Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes

Model 1,2,3,4,5,6 (Table 4) shows that Indian MNCs in developing nations react strategically to governance challenges. They prefer weaker governance concerning VA (a negative and significant coefficient) but more robust governance concerning all the other five indicators, which indicate a positive and significant coefficient. Findings suggest that Indian investors are more cautious when investing in developing economies with weak governance setups vis-à-vis developed economies that otherwise have a more robust regulatory environment. Our findings reveal that VA and Indian OFDI to the developing host nations have a significant negative relationship. Strong VA indicator pertains to increased public access to government performance and the ability to raise their voice (Sujit et al., 2020). This implies that VA affects FDI by incorporating public opinion into investment decisions, discouraging investors. Our results corroborate the findings reported by Muhammad & Khan (2020).

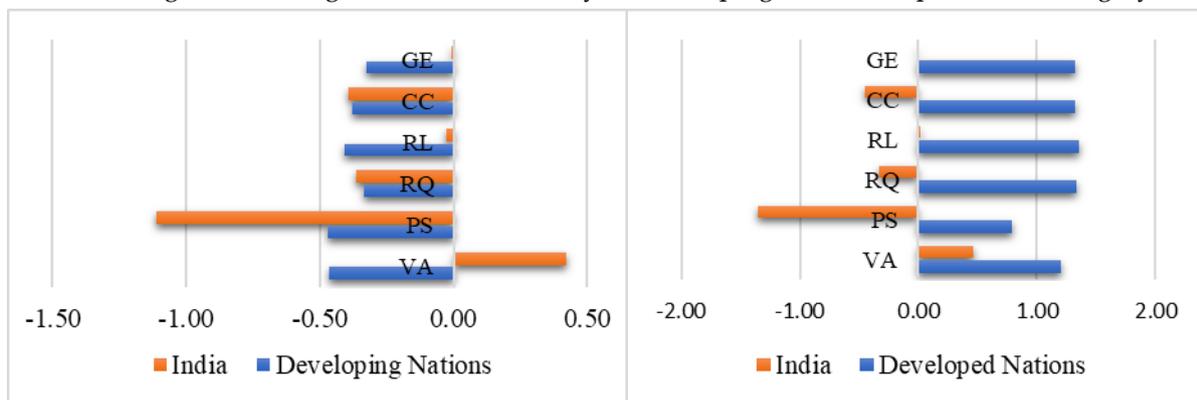
Table 4: Tobit Estimation (Developing Nations)

	VA	PS	RQ	RL	CC	GE
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>ln(GDPjoint)<sub>ijt</sub></i>	0.088** (0.084)	0.617*** (0.155)	0.195** (0.142)	1.033** (1.431)	2.943** (1.331)	1.345* (1.085)
<i>TO<sub>jt</sub></i>	0.637*** (0.131)	0.418*** (0.115)	0.637*** (0.119)	0.733*** (0.121)	0.393*** (0.130)	0.361*** (0.135)
<i>lnNResources</i>	-0.017* (0.126)	-0.410* (0.230)	-0.575** (0.249)	-0.482*** (0.244)	-0.273* (0.207)	-0.195 (0.181)
<i>lnSAssets</i>	0.216*** (0.048)	0.068** (0.042)	0.054*** (0.040)	0.091** (0.038)	0.019** (0.036)	0.039** (0.036)
<i>lnTax<sub>jt</sub></i>	-0.248 (0.464)	-0.121 (0.472)	-0.147 (0.443)	-0.124 (0.516)	-0.900* (0.488)	-0.682 (0.454)
<i>Contig</i>	-3.922*** (0.570)	-3.532*** (0.673)	-2.474*** (0.688)	-3.764* (2.159)	-5.769*** (1.939)	-3.514** (1.463)
<i>ComLang</i>	2.909*** (0.409)	1.434*** (0.282)	0.073* (0.260)	0.171* (0.297)	0.018** (0.281)	0.435* (0.387)
<i>lnDistCap<sub>ijt</sub></i>	-0.624* (0.384)	-0.898*** (0.306)	-0.320* (0.237)	-0.499* (0.267)	-1.274*** (0.324)	-0.845*** (0.260)
<i>lnInfra</i>	-0.078** (0.346)	-0.513*** (0.218)	-0.998*** (0.207)	-0.742*** (0.209)	-0.721*** (0.224)	-0.922* (0.210)
<i>Ins.Qty<sub>jt</sub></i>	-1.770***	1.481***	1.563***	1.786***	2.115***	2.455***

	(0.296)	(0.147)	(0.246)	(0.340)	(0.283)	(0.301)
Constant	-20.817***	-23.093***	-4.478**	-23.296	-72.719**	-29.632
Observations	(5.357)	(8.274)	(8.083)	(40.495)	(36.761)	(30.237)
TF Effects	Yes	Yes	Yes	Yes	Yes	Yes

The higher average GQ prevalent in the developed category (Fig.1) does not significantly distinguish one nation from another. Nevertheless, Indian MNCs prefer aligning more with economies with relatively weaker governance quality within the category. They prefer investing in developed host nations with a governance environment similar to India. On the contrary, the relatively low average level of governance across developing categories necessitates a deliberate distinction between better and poorly governed nations. It is thus a big differentiator attracting Indian OFDI to the better-governed nations in the region. In other words, with consistently improving home IQ, Indian MNCs prefer investments in developing countries with a comparative governance framework (Fig 1).

Figure 1: Average Governance Quality in Developing and Developed nation category



The study finds full support for H2, suggesting that market seeking motivation for horizontal

FDI ( $GDP_{joint}$ ) is positive and statistically significant across both economic groups. According to the findings, market oriented Indian MNCs prefer bigger markets with strong purchasing power, consistent with previous research (Leong & Lee, 2019).

The results do not support H3, implying that natural resource-seeking motivation is not the primary driver for Indian investors in developing and developed nations. Despite a 59 per cent increase in resource-seeking investments in developing nations over the last decade (\$87.8 million in 2018 to \$275 million in 2018), their share of overall OFDI flows remains minor (17 per cent) compared to manufacturing (40 per cent) and services (43 per cent). On the other hand, developed countries saw a dramatic 30 per cent drop from \$1837.6 million to \$1109 million during the same period.

Estimations validate H4, suggesting that a strategic asset-seeking motive drives Indian MNCs in both developed and developing economies. The findings are consistent with earlier studies proposing that Indian investors seek to acquire advanced technology, managerial skills, and brands, among others, primarily to augment their asset base in the developed markets (Scalera et al., 2020; Das & Banik, 2015). At the same time, IT services and chemicals are dominant sectors attracting Indian strategic asset-seeking investments in developing nations (Völgyi & Lukács, 2021). From 2008-2018, developing nations have been the leading destinations for OFDI in high technology sectors. In contrast, medium- low technology investments mainly focus on developing countries, accounting for 69% of manufacturing sector investments (Joseph, 2019). The significance of strategic assets in developing economies mirrors the unconventional nature of Indian investments, similar to the finding by Sutherland et al. (2020). These acquired strategic assets fortify the Indian firm's competencies in the global market and its competitive position relative to its local firms (Ahsan et al., 2021). Indian MNCs have also acquired foreign firms

seeking access to the prescription drug market (Munjal et al., 2021). Lupin Limited in the USA and Russia, Cipla, and S&B Pharma Inc. in the USA are just a few examples of recent Indian MNC investments.

Findings further indicate that trade openness (H5) has a positive and significant influence on Indian OFDI flowing into both groups of economies, similar to the findings reported by Rehman & Islam (2022) and Nayyar & Mukherjee (2020). The host country's high trade openness attracts MNCs with efficiency-seeking (asset-augmenting) motivation to integrate with global value chain configurations (Tsitouras et al., 2020).

The preference of Indian investors towards nations with low tax regimes (H7) is partially supported across both developed and developing economies. The coefficients were negative but did not reach the expected significance level in both categories. It could be interpreted that tax haven countries, which are not included in the study, are ideal locations to avoid paying taxes; otherwise, tax is not the primary factor influencing overseas investments in other nations. However, the findings fully support H8, suggesting that Indian OFDI is significantly discouraged by larger distances to the host country under both categories. Full support for H9 indicates that the presence of common language in both developed and developing nations significantly attract OFDI, comparable to the verdicts by Behera et al. (2021) & Xiong & Sun (2021). However, contiguity in the developing category negatively affects investments, similar to the finding by Nguyen et al. (2020). Consistent border tensions with the neighboring states seemingly deter Indian OFDI in the bordering regions. India does not share a border with any developed nations considered in the study.

### Conclusion

The study broadens understanding of the critical factors influencing Indian OFDI by employing an augmented gravity model of FDI in 40 host countries based on the conceptual groundwork provided by Dunning (1988) and North (1990). Overall, the empirical analysis proposes that strategic asset-seeking and market-seeking motivations drive Indian OFDI in both regions. However, regarding governance, Indian investors are more cautious when investing in developing economies (preference for highly governed host nations), which tend to have weak institutional setups vis-à-vis developed economies with a more robustly governed environment.

Indian investors prefer developed countries with relatively weaker GQ within the developed region. It reflects investors' intention to benefit from similar governing environment by investing in a comparable host nation (Wu et al., 2016; Kim & Choi, 2020). On the contrary, Indian investors prefer developing nations with robust and better GQ concerning PS, GE, RQ, RL, and CC. However, they are weak in terms of VA for the market and strategic assets seeking investments. The average governance quality of the developing category nations is relatively similar to India's home quality; hence, India prefers a similar GQ in the developing host nation.

The relationship between GQ and OFDI further suggests that governance attributes should be the prime focus of government across developing regions to draw significant overseas investors. Economic growth necessitates strong governance and overarching institution-building. Developing nations should focus on improving governance quality in terms of citizen participation, as the weaker VA preferred by investors may be detrimental to nations' long-term growth (Çam & Özer, 2022). Concurrently, Indian policymakers should further strengthen their GQ to promote more MNC operations in developed nations and strengthen their foothold.

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# Internationalisation of South African companies in the hardwood industry in the European market

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## Keywords

Strategic Management; Export opportunities; Internationalisation; European Market; Economic growth

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## Abstract

**Orientation:** Export opportunities, internationalization, have been prioritised by South African Trade and Industry in order to promote economic growth.

**Research purpose:** It is critical for the expansion of organisations to consider internationalisation when there are prospects for expanding trade activities in already existing and sometimes firmly established markets.

**Motivation for the study:** Upon entering an international market competitively, a clear understanding of all factors impacting on profitability and sustainability of the organisation strategic endeavour, is required.

**Research design, approach and method:** A case study research design was selected for this study. The parameters presented a large role player in the hardwood industry and export trade at the time of the data gathering. Qualitative research approach represented the data collecting process as observational and specifically perceptible. The data acquired from participants in their natural environment and preference given to the ways in which individuals interpret their social world. Secondary data was used.

**Main findings:** Belgium's market size for hardwood products is greater than the consumption indicating an over-supply, whereas Germany's supply and demand are exactly equal. The Netherlands' demand for wood is greater than the supply.

**Practical/managerial implications:** Although all the European Countries are possible export markets for wood, it is recommended rather to concentrate exports of wood products to the Netherlands.

**Contribution/value-add:** The international market for hardwood in Europe is available for exports from SA. The Forest Stewardship Council (FSC) certification awarded South African plantations is sufficient to serve as the requirements stipulated by both the European countries and CITES.

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## 1. Introduction

Notwithstanding the close relationship between internationalisation and globalisation, these notions should not be confused. Tolstykh (2014) distinguishes between the two concepts by describing internationalisation as the intensification of international connections and exchanges, and globalisation as the expansion of this process to the point where unconnected regions become similar parts of a unity.

Cavusgil and Riesenberger (2014:38) define internationalisation, in a similar way to Tolstykh (2014), namely as a company's inclination to systematically increase the international element of the business actions. International business is international trade, international investment, or foreign direct investment. The trade will include both products and services exchanged, either through importing or exporting to or from customers from SA or a foreign country. This practice is also known as inbound and outbound activity. International investment refers to organisations securing ownership of assets situated in a foreign country. Nowak (2018) elaborates on internationalisation by referring to the liberalisation that

takes place in the process of removing officially imposed restrictions on movements of resources between countries. Further to this easing of barriers, is the process of diffusing numerous products and new experiences to people in all parts of the world, also known as universalisation. Nowak (2018) added a specific type of universalisation called Westernisation, whereby the social structures of Western civilisations are spread universally.

Organisations will consider internationalisation when there are prospects for expanding their trade activities.

## 2. Internationalisation in South Africa

SA participates in regional initiatives such as the Tripartite Free Trade Area (TFTA), and the Continental Free Trade Area (CFTA) under the African Union's Agenda 2063 and is a member of the SADC and SACU blocks in Southern Africa (African Development Bank, 2018). SA also participates in bilateral agreements, such as the African Growth and Opportunity Act (AGOA) and the EU/SADC Economic Partnership Agreement, between SA, Botswana, Lesotho, Namibia, Mozambique and Swaziland established with the EU on 15 July 2014. There are further existing trade agreements such as the European Free Trade Area/SACU (Botswana, Lesotho, Namibia, SA and Swaziland) (May 2008) and EU-SA (January 2000) (African Development Bank, 2018).

According to the EU/SACU agreement, the five participating countries deposit their customs and excise collections into one revenue pool. Botswana, Lesotho, Namibia and Swaziland receive a significant share of their revenue from the customs levies which are dependent on the business cycles with SACU's major trading partners, and on the performance of the South African economy. The fiscal outturns in these countries, with the exception of Botswana, therefore, largely reflect the path of the South African economy (African Development Bank, 2018).

As part of the South African economy's pursuit to promote economic growth, regional integration is important. The widely acknowledged agreement that a high level of regional integration also improves economic growth, was proven correct by the African Development Bank.

The main trade corridors in SA are the Cape Town-Gauteng and Durban-Gauteng corridors, and the main ports are connected to the economic heart of the country, the Gauteng Province, and part of the North-South corridor, which is a multimodal (road, rail and port) transcontinental interconnector linking SA, Botswana, Mozambique, Zambia, Zimbabwe, Tanzania and Malawi and, finally, connecting Cape Town to Cairo. Durban has been identified as the busiest port in SA and also as the 3rd largest container port in the Southern Hemisphere (African Development Bank, 2018).

SA is integrated in the regional and global value chains in which 34% of total exports constitute intermediate goods, 26% raw materials, 24% consumer goods, and 15% capital goods are exported. (African Development Bank, 2018).

## 3. Export South Africa

Cavusgil et al. (2014:393) defines exporting as the organisation's strategy followed in international trading. This strategy results in the exporter being able to both enter and withdraw from markets fairly easily, with minimum risk and expenses. The volume of world exports has grown enormously, to such an extent that various industries depend on international trade (Cavusgil et al., 2014:393). A systematic approach of assessing potential markets, organising the business, acquiring the necessary skills and competencies and implementing export operation, will lead to successful exporting, according to Cavusgil et al. (2014:396)

### 3.1. Increasing demand for South African goods and services

The Integrated National Export Strategy (South Africa) prioritised high-growth emerging markets, especially those in Africa, Asia, BRICS, Latin America and the Middle East. Export promotion mechanisms such as Investment and Trade Initiatives, National Pavilions, Trade Missions and unconventional interventions are used as levers to create visibility and market access for South African exporters. The aim of such ventures is to provide the right exposure for South African exporters and their

products by increasing the visibility of SA as a supplier of choice (Department of Trade and Industry, 2018).

### 3.1.1 Exporting hardwood products from South Africa

Although there are many suitable and cost-competitive substitutes for hardwood, made for example from fossil fuels, which are becoming increasingly more available, the major advantage of wood is still the fact that it is environmentally friendly. However, significant forecasts have predicted that tree felling aids environmental degeneration by contributing to the increase in atmospheric emissions of carbon dioxide (Food and Agriculture Organization of the World, 2018).

The World Forestry Organisation predicts that the demand for timber consumption will increase in the West over the short term. This fact, together with the growth in the developing world, and an expected increase in energy generation from biomass, will increase global timber consumption to levels not experienced before (Food and Agriculture Organization of the World, 2018).

Based upon the above predictions, the possibility of exporting hardwood and wood products from SA will increase and important aspects to deliberate when considering exporting will be:

SA's GDP growth is expected to continue at close to two percent in 2019 and 2020 (according to predictions made in 2018) (World Bank, 2018). GDP in 2020 will not reach a positive growth percentage due to the Covid-19 impact. This pandemic will result in negative estimates impacting on all sectors of the economy.

Pulpwood from the harder pulpwood species (hardwood) is expected to increase slightly, because of the capacities that the chipping plants allow. This growth will result in a higher supply of this product and greater export opportunities. The price will be driven by the South African inflation rate and the R/\$ exchange rate (Food and Agriculture Organization of the World, 2018).

Mining timber (hardwood) is expected to decrease in line with the decrease in demand from mines. (Food and Agriculture Organization of the World, 2018). The possibilities of production for treated poles are expected to remain at current levels with the opportunities in the export market. Poles, both treated and untreated, are in high demand. The pole supply (hardwood) increased in 2019 with further expectation in 2020. This forecast is in line with the information received from the company because pole supply is a specific component that has been cultivated over the past five years. Price increases are expected to be in line with the national inflation rate (Food and Agriculture Organization of the World, 2020).

The prime overdraft rate was to remain at 7.25% in 2019 and remain unchanged towards the end of 2019, beginning of 2020 (South African Reserve Bank, 2019). After the first case of Covid-19 was reported in December 2019 in China and a world pandemic was announced in February 2020, SA's economy, in line with the rest of the world, went into recession, resulting in unemployment increasing exponentially as the lockdown of the economy started to take effect. (South African Reserve Bank, 2020). The R/\$ exchange rate was at R14.45 (April 2019) and is expected to trade between R14.50 and R14.80 in the short term. The forecast for 2019 is an average of R14.80 and for 2020 it could be at R15.39, as forecast at the end of 2018, beginning of 2019 (South African Reserve Bank, 2019). However, the unforeseen impact of Covid-19 and the sales of SA Bonds, due to uncertain foreign markets because of the pandemic, resulted in the foreign exchange rate plummeting with South African exchange reaching record lows of more than R22 against the Pound Sterling.

The inflation rate is likely to increase from the current 4.4% to 5.4% in 2020, as forecast in 2018 (South African Reserve Bank, 2019).

Companies with sawmilling operations will have the advantage of a vertically integrated supply chain through which the timber plantations are transferred to sawmill. Therefore, if a Company wants to produce and export more sawn wood, it will be possible to do so because the sawmill operations can be expanded as and when needed.

### 3.1.2 Importance of information of country of destination

South African companies in the hardwood industry want to enter, or re-enter, the European market. This market is, as Aregbeshola (2017:256) indicates, unique in context and structure, even though there is a

regional economic integration between the European countries from which the markets benefit. These countries include those toward which this study is directed, namely Belgium, Germany and the Netherlands. Although, according to Aregbeshola (2017:256), the economic arrangement emphasised “a liberalisation of integration of ideology”, the core was founded in the openness and accessibility of trading in goods and services taking place. This arrangement was possible with the availability of transferable money, as well as access to labour and resources across all the borders of the EU states.

The treaty agreed upon by the EU included the existence of various advantages for the participative countries, but, even more importantly, determined a uniform standard for products and production processes. This uniformity, however, resulted in further economic and social integration until a Single European Act, the realisation of a single market, came into effect in 1987 (Aregbeshola, 2017:256).

The traditional analysis of hardwood supply and demand, centred on wood removals from forests and wood input to industries, is inadequate. This fact was already determined more than a decade ago, suggesting that a more complex approach is necessary, based on comprehensive wood resource balances and requiring original research and data gathering, (Food and Agriculture Organization of the World, 2018). The SA Forestry reported on the Global Forestry Index 2018 (Forestry SA, 2018) as follows:

**Global timber markets:**

In early 2018, the Global Sawlog Price Index (GSPI) reached \$80.73/m<sup>3</sup>, its highest level since 2014. Sawlog prices generally increased in local currencies during 2018, but with a stronger US dollar, the dollar denominated GSPI index fell by about 5% during the year.

Mixed price movements in Europe resulted in fairly small changes in the European Sawlog Price Index (ESPI-€). In the fourth quarter of 2018, the index was up 1.8% quarter on quarter, but was practically unchanged from the fourth quarter in 2017 (Forestry SA, 2018).

**Global lumber markets:**

In 2018, the global trade in lumber fell for the first time in five years, with total trade down 7% year-on-year to an estimated 115 million m<sup>3</sup>.

US lumber prices have experienced a historical ‘roller-coaster ride’ over the past 12 months. Average prices for pine in the US South were at about \$420/m<sup>3</sup> in January 2018, peaked at \$554/m<sup>3</sup> in June, and fell to \$372/m<sup>3</sup> in early 2019.

Sawmills in the Nordic countries had a very good second half of 2018, with lumber prices in the local currencies in the second half reaching their highest levels since 2007.

Lumber imports to China fell for two consecutive quarters to reach 5.9 million m<sup>3</sup> in the fourth quarter of 2018.

Russia's share of total imports to China increased from 55% in the fourth quarter of 2017 to 63% in the fourth quarter of 2018, during which the sawmilling sectors in Siberia and the Far East continued to expand and deliver competitively priced lumber.

Despite substantial declines in the gross margins for sawmills in the US, profits were still above the ten-year average in the fourth quarter of 2018 (Forestry SA, 2018).

**Global biomass markets:**

Global trade of wood pellets jumped almost 18% year-on-year in 2018, when a new record of over 20 million tons was shipped.

Pellet prices in Austria and Germany reached their highest price in five years in the first quarter of 2019 (Forestry SA, 2018).

Taking the above facts into consideration, there still is an increasing market for both new and existing plantations, according to The United Nations Economic Commission for Europe (UNECE, 2018). Wood supplies need to be increased to successfully participate in the export market.

### **3.2. Export opportunities to Europe**

Within the forecasted demand for wood, SA has the opportunity to increase its wood supply into world markets in the future. However, the main suppliers of wood in the future will be the Northern Hemisphere countries, followed by Asia and South America. Notwithstanding this fact, SA is currently

exporting to various countries, and there are indications of other countries and regions which might be future potential markets.

### 3.2.1 Trade agreements and restrictions

SA may enter the EU markets without any tariff barriers because it falls under the Generalised System of Preferences (GSP), a programme designed to promote economic growth in the developing world, by providing preferential, duty-free entry for products manufactured in the African, Caribbean and Pacific (ACP) countries. However, South African products still have to meet certain requirements to enter the EU market, for example, they have to provide evidence of origin to EU customs in the form of a Certificate of Origin, and the wood or articles, therefore, must be transported directly to the EU from the country of origin (Department of Trade and Industry, 2018).

While generally a positive development, these tariff reductions will partially erode the margin of advantage enjoyed by SA. Tariff rates on hardwood products in developing countries tend to be much higher than those in developed countries, ranging from 10% to 60%, with additional taxes and duties often elevating the total burden considerably (Department of Trade and Industry, 2018).

### 3.2.2 non-tariff measures

There are a number of non-tariff measures (NTMs) for wood products that are often less visible than tariffs, and include quantitative restrictions such as:

- import quotas,
- technical standards,
- plant health (sanitary and phytosanitary) standards,
- export restrictions,
- cumbersome import licensing,
- customs procedures and
- domestic policies.

The NTMs are also more complex than tariffs and are thought to have a greater trade-restricting effect, thus, it can be harder to gauge their impact (The Unseen Impact of Non-Tariff Measures, 2018). One of these measures is the use of import quotas for forest products. This quota is declining, resulting in possible difficulties in exporting to these countries in the future. However, the use of export restrictions, particularly on logs, has been lifted which has had a major impact on trade in forest products. Complying with import licensing and customs procedures, adds costs to foreign suppliers' goods, something that domestic producers, or for that matter, those operating in EU countries, cannot endure. Certain domestic policies (or EU-related policies) including subsidies and tax concessions, affect the competitiveness of foreign producers because these reduce domestic producers' costs (The Unseen Impact of Non-Tariff Measures, 2018).

As far as hardwood products are concerned, safety regulations usually revolve around their strength characteristics and suitability for use in construction. These rules are more applicable to logs and sawn wood than to higher value-added processed wood products, which are rarely used for structural purposes. The same condition is applicable to health and phytosanitary standards. Value-added products containing dried timber reduce phytosanitary risks. The EU could regard health and phytosanitary regulations more important for trade in non-wood forest products (NWFPs) since these products are often used in food and environmental contexts. There may be, for example, restrictions on wood-based panels containing formaldehyde glue, controls designed to discourage companies from using chlorine to bleach pulp, and regulations regarding the recycling and recovery of wastepaper and packaging (Kowalska, Donatello & Wolf, 2019).

Two agreements from the World Trade Organisation (WTO), were part of the Uruguay Round, may lead to a reduction of the impact of NTMs. The Agreement on Technical Barriers to Trade (TBT) limits the use of technical regulations to legitimate safety, health and environmental protection purposes, while the Agreement on the Application of Sanitary and Phytosanitary Measures may improve quarantine and inspection conditions (Understanding the WTO Agreement on Sanitary and Phytosanitary Measures, 2018).

Most trade restrictions are motivated by concerns about the environment. This incentive is even more pronounced in the forestry sector in which bans, and boycotts are aimed at encouraging sustainable forest management. The NTMs include bans on the use of timber from forests which are not sustainably managed, and these restrictions have been imposed by local authorities as well as retailers and traders. However, the main target of these restraints is the tropical timber, due to concerns about tropical deforestation. The certification of forest products by the FSC, to assure consumers that the wood used in the products is obtained from a sustainably managed source, is one way of abiding by these NTMs. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) uses degrees of trade restrictions to regulate trade in endangered species (Department Agriculture, Forestry and Fisheries, 2018). 'Anti-dumping' measures have recently been used by countries such as the US as a barrier to defend their local wood products industry, which came under pressure from cheap imports from countries such as China (Jean & Resheff, 2017).

#### **4. Research Methodology**

A case study research design was selected for this study. (Babbie & Mouton (2014:75) This research design is focused on a specific situation, and on the researcher's understanding the uniqueness of the case within the complex environment (Welman & Kruger, 2004:21). The main objective of a case study is to determine the dynamics of the single bounded system, therefore particular parameters and careful consideration for such parameters is required.

The important parameter was that the chosen case had to be a large role player in the hardwood industry in particular because this is the industry in which there appeared to be a need for export trade at the time of the data gathering.

The case study research design, guided the researcher in selecting an appropriate research approach in accordance with the considerations delineated below.

Qualitative research approach – the data collecting process is either observational and/or specifically perceptible. Consequently, the accumulated data is not quantifiable, because behaviour were observed (not measured) and then interpreted. The data was acquired from respondents in their natural environment and preference given to the ways in which individuals interpret their social world. Deductions and interpretations of a social phenomenon constantly shift as interpretations by individuals change (Creswell & Poth, 2016:104). Inductive reasoning also applied (logic that stems from specific facts but is drawn to believable generalisations).

##### **4.1 Literature analysis**

After the specific problem in the wood industry was identified, the next step was to review the available literature on both the topic and other relevant aspects. Of particular significance is its effective analysis of the literature in terms of the objectives of the study. In this study, literature analysis was also implemented as a research method. More specifically, the analysis of the various categories and units of meaning.

##### **4.2 Semi-structured interviews**

Semi-structured interviews were conducted with participants, supplemented with extensive notes. The interview data came from: (Babbie & Mouton, 2014:288).

Through enculturation. The gathering of data was achieved by interviewing people with knowledge of the wood industry, the business environment (national and international) and export understanding.

Current involvement. Individual semi-structured interviews on a one-to-one basis were conducted, recorded and transcribed with respondents involved with the operations and exporting, or possible exporting, of hardwood from SA.

Adequate time. The time for interviewing the respondents was staggered. Appointments were made to interview the specific people at a time selected by the respondents. All the participants' interviews were scheduled for at least an hour's duration.

The most important purpose of the data sourced from semi-structured interviews was for the researcher to gain new knowledge and, therefore, participants with considerable experience were

recruited as recommended by Fox and Bayat (2013:73). The inclusion of a participant in an interview required careful consideration of the following criteria:

Participants' understanding of the circumstances and conditions under which the wood industry operates, as well as its exports or possible exports. Current market indications were taken into consideration to guide this criterion.

Participants' relationship and ease with the interviewer (researcher). Sincere interpersonal relationships between the researcher and certain participants in a company had evolved over the previous two years due to the preliminary research undertaken at the company and, specifically, at the sawmill operations in Limpopo. Preliminary research was conducted after the completion of the initial literature review, in order to refine the problem statement and the research objectives. Visits to the company, the sawmill and the plantations, resulted in preliminary research which included observations as well as informal interviews, mainly in the form of discussions and explanations in explorative research circumstances. This procedure was necessary to understand the environment and the product, as well as for creating a basis for further research. Based upon this gained knowledge, it was possible for the researcher to ask the participants probing questions during the formal interviews without causing them any discomfort, in order to acquire valuable primary data.

Participant's knowledge and expertise on aspects that could potentially influence features in the decision-making process (as identified in informal discussions as well as the literature analysis).

Although qualitative research interviewing ideally is similar to a conversation, the important aspect of keeping the participant interested in the conversation was accomplished through the use of more open-ended questions during the interview (this interaction was still guided with an interview schedule to ensure that all the topics/themes were covered). An important advantage, according to Struwig and Stead (2014:102) of this less restrictive method of interviewing, is that it provides in depth data on the topic because it allows for the respondent to be probed during the interview by asking related questions. Probing during face-to-face interviews leads to more relevant and, in many cases, thicker data.

Every interview was conducted in the following way as guided by Nyathi (2008:54):

all the interviews were face-to-face,

permission from the participant was asked prior to the interview,

all the interviews were recorded and then transcribed,

the researcher made field notes and observations allowing an opportunity of noting any non-verbal signals.

The participants who were involved in the study were carefully selected and the demographic particulars of the chosen participants included forestry specialists, skilled people in the wood industry (management level), Operational National Key Account Managers from logistics companies (both national and international, Europe) as well as Logistics Coordinator/ Expert on Export (South Africa).

#### 4.3 Document analysis

Heterogeneous data was not produced by the research, therefore documents that already existed, were also applied as recommended by Bryman et al. (2018: 274). The documents were selected with the following in mind:

Accessibility for viewing; available whenever needed for analysis; provided data regarding forestry and the hardwood industry (local and international), changes in demand for hardwood (local and international), demand for hardwood (local and international), suppliers of hardwood (local and international).

Relevance to the research topic; physical data through observation was collected and summarised differently, such as by Statistics South Africa, trade policies, trade agreements, tariff barriers, non-tariff barriers, export regulations, export cost structures, trade figures on SA exports and imports, as well for Germany, Netherlands and Belgium, SA economy and global economy,

The quality of the documents used in this research study was evaluated against the four criteria that are applicable to secondary data, as set out by Bryman et al. (2018: 274) because there are similar principles of secondary data that may apply to document analysis:

Authenticity

Credibility  
Representativeness  
Meaning

The public documents proved to be a great source of information and yielded a large amount of statistical information, as well as providing details of research already completed on hardwood and forestry. All the data was accessed through reputable and authenticated sources and was applied in the integration of information.

## 5. Empirical Results

### 5.1 Export to European countries from South Africa

The hardwood processing in Europe is still dominated by small and medium-sized sawmills indicating the value chain, as it is known in South Africa, not available, and organisations are therefore not in control of the production process. Total wood production in the European Union was approximately 470 million m<sup>3</sup> in 2017. Sweden produced the roundest wood (73 million m<sup>3</sup>), followed by Finland (71 million m<sup>3</sup>), and Germany and France (producing 51 and 64 million m<sup>3</sup>) respectively.

According to Teischinger (2017), Europe relies on external suppliers of wood, of which China is the largest external supplier of timber products to the EU, contributing nearly 40% of all timber product imports. The UK is the largest importer of timber and wood furniture products from China, a total of 30%, followed by Germany (15%), France (14%), Netherlands (8%) and Belgium (7%).

Although China is still the world's top wood-products commodity chain, it has also become the leading importer of logs, due to the exports of wood-based products that basically tripled in volume, and exponentially increased so much in value in the last five years. Therefore, as Teischinger (2017) indicates, to meet the domestic and export demand, enormous amounts of raw hardwood are being imported from forestry countries such as SA. The estimation is (no real figures available) that China imports wood up to 20 million m<sup>3</sup> of illegally sourced wood and wood products per year (Teischinger, 2017).

Over and above the imports from member countries of the Commonwealth of Independent States (CIS) of about 20%, the EU imports from Russia, the Ukraine and Belarus. These are primary-processed wood products such as sawn wood, plywood and logs. Log imports have declined from CIS countries over the last five years owing to steep log export tariffs by the Russian authorities, while focussing on the imports of sawn wood and plywood.

Close to 20% of the EU's imported timber products are from Southeast Asia. These imports are located in only a few EU countries, of which the UK is the largest importer, 25%, and the other five importers include the Netherlands, Germany, France, Belgium and Italy, together accounting for over 75%. The imports from other regions are Indonesia (€804 million), Malaysia (€629 million), Vietnam (€555 million) and Thailand (€186 million) (2017). These imports are mainly wood furniture and secondary processed wood products, as well as joinery products (produced domestically in the EU), mainly glulam and doors. The Netherlands and Germany, however, source significant volumes of sawn wood used for the manufacturing of window frames. The South-Eastern Asia's profile of the wood manufacturing industry has changed over the last five years using plantation species, including rubber wood and acacia, grown within the region, and a wide range of other species imported from elsewhere, such as eucalyptus from SA (Forestry SA, 2019).

In 2017, the EU imported timber products from Brazil, Argentina, Paraguay, Ecuador and Bolivia in Latin America with a value of €900 million. These products are destined mainly for France, Germany, the UK, Belgium and the Netherlands. The major component, over 95%, is hardwood, mainly from natural forests in the Amazonian region and comprises approximately sawn wood 32% and plywood 25%. Brazil's furniture industry is 2% of the total world furniture production (Food and Agriculture Organization of the United Nations, 2020).

The EU imports hardwood products from Central African regions into France, Italy, Belgium, Spain, the Netherlands, Denmark, the UK and Portugal. Imports consist primarily of rough sawn wood and veneers, and represent a very small percentage of the EU's total imports (Food and Agriculture Organization of the United Nations, 2020).

Before wood products can be exported to the EU, a due diligence system (DDS) must be in place to minimise the risk of putting illegal timber or derived products onto the market. The three elements that are important here, are the information regarding the wood's origin, the risk assessment, and the risk mitigation, which will be monitored by a 'monitoring organisation' providing the DDS. These organisations are comparable to certification bodies and recognised by the European Commission's national authorities, obligated to keep records regarding from whom the wood products were bought and to whom they are sold (Teischinger, 2017).

The lessening of illegal logging, as well as the establishment of sustainable forestry and forest management practices through cultivating governance and promotion of trade in legally produced timber, is maintained through wood products having to satisfy the terms of FLEGT (Forest Law Enforcement, Governance and Trade) or CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) which are considered to comply with the Regulation by Definition (so-called 'green lane'). SA has a FSC certification in over 80% of the commercial plantations already covering the legal requirements stipulated by FLEGT and CITES (Forestry Stewardship Council, 2019).

### 5.1.1 Various subcategories influencing the export to European countries

The total export value of wood products from SA was R28.9bn (2017) of which R8.026bn was hardwood. The major recipients of these exported products are Africa and the South African Development Community (SADC) member states. SA is part of the various favourable trade agreements that exist between the BRICS (Brazil, Russia, India, China, and SA) countries. Exports to the BRICS countries increased during recent years to R7 776 728 183 (2017) in wood and wood products, totaling R681 019 711 in solid wood (Forestry SA, 2019).

The export markets of Indonesia, Vietnam and China have grown exponentially over the past few years. These countries are harvesting wood from countries with FSC forestry products to use in the further production process of furniture, veneer, plywood or laminated floors. This fact was also indicated by Participant 2, because The Company is already exporting, on a small basis, to China and Vietnam.

The subcategories, influencing export opportunities to the three EU countries, Belgium, Germany and Netherlands as the possible countries of choice, are:

Changes in GDP of the targeted countries

The changes in the GDP of each of the targeted countries in the EU indicated an economic growth. The European market is showing a steady growth in GDP of close to 2% p.a. The supply of timber products per country is slow or even decreasing according to the Centre for Promotion of Imports (2020). They continue by adding that the plantations are still at a relatively young production stage and most countries rely on imports. Producing countries aim to promote value additions to existing wood products. The people are willing to spend money on alternative products, more expensive substitutes, or luxury goods. The targeted product is a durable quality product and may be more expensive.

The major competitors in targeted countries

Europe is recognised as the largest market in the world for conventional timber products and sustainable tropical timber products. However, it has the world's strictest market access and buyer requirements (What competition do you face on the European timber market, 2020).

The EU Timber Regulation (EUTR)

EUTR may hinder market entry. Implementation of the EUTR introduced stringent requirements for the import of tropical timber into the EU market. This regulation is to ensure sustainability and traceability throughout the supply chain. The FSC certification (Forestry Stewardship Certification, 2019) shortens this process. Added-value products versus primary products will also provide export opportunities in the EU market. Products such as plywood, garden furniture, doors and frames, although much more elaborate with more detailed technical and design requirements than sawn wood, decking and mouldings, are in demand. The market for added-value products is more complex in terms of finding the right buyer and proving supplier competence. It is also a vast market with a larger potential profit (What competition do you face on the European timber market. 2020).

To increase their buying power, large importers are becoming even larger and stronger through merging smaller companies into much larger ones. This practice has led to an increasing trend in which a

few large players dominate the timber market in Europe. Because each player is responsible for such a large market share, these companies are able to dictate far-reaching demands. As a result of this horizontal consolidation, exporters have fewer alternatives in terms of selling their products and have no choice but to comply with the long list of demands made by these large importers to retain a foothold in the market (Teischinger, 2017). Growing demand in emerging economies as well as diminishing resources, has the effect that it will become more difficult for European buyers to find suppliers.

The total import values into the EU have increased from €32,703 million in 2014 to €34,127 million in 2015. The largest part of the import (71%) is intra-EU trade. This means that countries within the EU are importing from other EU countries. Of the total import, 16% comes from developing countries, while 13% comes from the rest of the world. Countries such as France, Belgium and the Netherlands are clearly the frontrunners. (Centre for Promotion of Imports, 2020).

## 6. Findings

### 6.1 Economic growth in export country

To identify the possible export countries for wood products, an indication is needed regarding whether the total market of each country is large enough and/or if there is relative growth possibility in the market. In this research study, the countries selected are Belgium, Germany and the Netherlands. The growth in GDP per country over three consecutive years, as well as the type of wood products, is indicated.

Market size per country = sum of average production per country, average imports per country and average exports per country.

$$Ms \stackrel{\text{def}}{=} \sum \mu p, \mu m, \mu x$$

Ms: Market size, C = Country, y = year, p = production, m = import, x = export, μ = average

$$\mu p: \text{Average production (3 years): } \frac{p^{y1} + p^{y2} + p^{y3}}{3}$$

$$\mu m: \text{Average import (3 years): } \frac{m^{y1} + m^{y2} + m^{y3}}{3}$$

$$\mu x: \text{Average export (3 years): } \frac{x^{y1} + x^{y2} + x^{y3}}{3}$$

Calculate Average Market size per country:  $\mu p + \mu m + \mu x$

Average Consumption per country: (3 years)

$$*\mu c = \frac{c^{y1} + c^{y2} + c^{y3}}{3}$$

\*μc = Average consumption

c<sup>n</sup>: Consumption year 1

The average market size per country was compared with the average consumption per country.

### 6.2 Key hardwood products imported to EU.

With reference to the increase of the production value of wood industries in the EU of more than 48% greater than the EU's sawmill output, the real need for logs and sawn wood was indicated. However, the economic growth changes indicated a further potential increase in spending.

Average percentage change in economic growth: (average 3 years)

$$**\Delta\%EG^{y(n)} \stackrel{\text{def}}{=} \frac{\Delta\%EG^{y1} + \Delta\%EG^{y2} + \Delta\%EG^{y3}}{3}$$

\*\*Δ%EG<sup>y(n)</sup> = Average Change (Δ) Percentage (%) in Economic Growth (EG) in year (y(n))

The difference between consumption and % change in growth will indicate whether the consumers will spend more money on wood products if there is a change in the economic growth of the country. It will also reveal the connection between the consumption of timber, the increase in demand for wood and economic growth.

The average imports and exports per country (Belgium, Germany and the Netherlands), will indicate the consumer needs not satisfied by local production, when the relationship between imports and

consumption is determined. The relationship between exports and consumption will indicate the availability of local production as a % for exporting for these same three countries.

There are seven importing countries identified as the major importers to Belgium, the Netherlands and Germany. Imports to the total of 60% are from either developed or developing countries, the remaining 40% are from the EU countries and various other countries. African countries such as Cameroon, the Democratic Republic of Congo and Gabon, recently gained entry into the EU market, due to lower prices and lower labour costs (Centre for the Promotion of Imports from Developing Countries, 2019). This latter fact is a revealed competitive advantage.

### 6.3 Export procedures

When trading with another country, various variables must be taken into consideration. It is important first to gather information on the country of destination, specifically referring to aspects such as the geography.

#### 6.3.1 Transportation

Transportation is relevant when considering European countries as export opportunities because it may be a restricting feature. SA is a vast distance from all the major markets such as the European, Asian and Japanese markets. Three variables influence transportation:  $T = v_1 + v_2 + v_3$

*Variable 1: Distance and Transport Cost*

The distances were calculated from Port Durban to the main port of the countries being exported to, or the nearest port to the landlocked countries. All three countries are coastal countries with possible import/export harbours: Antwerp in Belgium, Hamburg in Germany, and Rotterdam in the Netherlands. Quotations for the shipment of a container from Durban harbour to either Belgium, Germany or the Netherlands were obtained from main shipping lines. Based on these quotations, the average shipping cost for each country can be calculated. Only 40 ft containers will be used holding either sawnwood to the volume of 36m<sup>3</sup>, or logs to the volume of 28m<sup>3</sup>. In Table 1 below both the transport cost and total volume per container are indicated from SA to Belgium, Germany or the Netherlands respectively. The total sea freight transport and all related transport costs, such as customs clearance charges for import and export are included.

Table 1: Total Sea freight per 40' container

Port	Antwerp, Belgium	Hamburg, Germany	Rotterdam, Netherlands
Durban Harbour	R57 406.00	R59 879.41	R68 113.92

Source: Main Shipping Line (2020)

*Variable 2: Trade tariffs, trade restrictions, trade barriers, custom duties, VAT and timber regulation*

SA is not only a developing country, but also a participator in a trade agreement with the EU. Therefore, no trade tariff is paid specifically for all exports to Belgium, Germany and the Netherlands.

No custom duty is paid on imports, however, VAT of 21% is payable on all imported products.

The FSC certification awarded to almost 80 % of the South African wood suppliers is sufficiently comprehensive to meet the EUTR and CITES requirements. Fumigation, as a precautionary measure, which is requested by many countries under the International Standard for Phytosanitary Measures (ISPM) 15 rules, is also directly addressed by the treatment of wood required for the FSC certification.

*Variable 3: Agency Fee*

The total transportation costs ( $t$ ) to the place of delivery will ultimately be calculated after taking into account the agency fee and associated costs. Table 2 below indicates the possible agency fees per export volume.

Table 2: Agency fees per volume

Description	Expected fee
Agency Fee	1.5% of total value
Road transfer to port	R 5 152.05 p/km
Rail transfer to port	R20.20 p/km rail
Customs Clearance Document	Fixed amount - R450
Communication Fee	Flexible
Destination Bill Fee	Fixed amount - R150
Pick Up Charges	Fixed amount - R480
EDI Fee	R80.00
Cargo screening fee	Fixed amount - R100
Terminal Security Fee	Fixed amount - R50

Source: Research Participants

The organisation may choose not to export directly but will make use of a Freight Forwarding Agent who will act on behalf of both the buyer and the seller.

Therefore (T) Transportation cost:  $T = v_1 + v_2 + v_3$

#### 6.4 Covid-19

In December 2019 a novel strain of the Coronavirus, Covid-19, was identified in the city Wuhan, in the province of Hubei in China, a major industrial and transport hub with 6 000 foreign companies having investments there. The initial Covid-19 cases resulted in thousands of Covid-19 infections within and outside of China with more than 90 countries affected. In SA the first case of Covid-19 was confirmed on 5 March 2020. On 12 March 2020, the World Health Organization (WHO) announced the virus outbreak as pandemic. By the end of June 2020, the Covid-19 cases worldwide exceeded 10 million. The outbreak resulted in major life losses with the number of people who tested positive for Covid-19 worldwide confirmed as 3.94 million, those who had recovered as 1.32 million and a total of 275 000 deaths (09/5/2020). SA's total confirmed cases, on the same date, were 8 895, with 3 135 recoveries and 178 deaths. Various health guidelines were provided on lifestyle adjustments to conservatively keep people at a social distance from each other (Impact of Covid-19 on the South African economy, An Initial Analysis, 2020).

The critical direct and indirect impact of the Covid-19 virus on the operations and value chains, resulted in a new, unknown, changing competitive landscape. The economy, both globally and locally, has been severely affected in three ways:

- production,
- supply chain, including market disruption, and
- financial impact on both businesses and financial markets.

It is important, therefore, to develop an understanding of the effect of the impact of the Covid-19 virus, as well as the strategic implementation of new and resourceful plans for obtaining and using the available resources to achieve the goals (Nickels et al., 2019:173).

### 7. Outcome and recommendations

#### 7.1 Outcome

As indicated previously, Belgium's market size for hardwood products is greater than the consumption indicating an over-supply, whereas Germany's supply and demand are exactly equal. The Netherlands' demand for wood is greater than the supply. However, no definite results could be identified between a change in % economic growth and change in wood consumption. The % specific wood products imported to Belgium, Germany and the Netherlands, as well as the % of said products from China, India and Vietnam, may be identified. Once the price of a product to be exported is determined, various other costs are added, such as the Agency Costs and the transportation costs. The final price is then determined. The logistic cost calculates between 55% and 60% of the price and may be even higher. SA is in bilateral trade agreements with the EU, resulting in no trade tariffs, trade restrictions or trade barriers. The normal custom duties and taxes need to be paid on all imports to EU countries.

## 7.2 Recommendation

Although all the European Countries are possible export markets for wood, it is recommended rather to concentrate exports of wood products to the Netherlands. However, while this market exists, it is serviced by a range of other countries, such as China, Vietnam and India. The wood produced in these Asian countries does not meet the requirements set by the EUTR of the EU countries.

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# An empirical study on women entrepreneurship in small scale industries

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## Keywords

Women, Entrepreneurship, Socio-economic, Small-Scale Industries (SSI)

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## Abstract

*Despite making up over 50% of the nation's total population (48%) and contributing only 34% to economic growth, women's participation in that process is limited. To develop a meaningful career for themselves, women are now taking on entrepreneurial roles. Although small in size, the small enterprises have had a significant impact on the Indian economy by helping to decentralise resources from the male to the female side, making them better suited to employing women.*

*The present study aims "to identify the socio-economic factors that limit women's entry into entrepreneurship and those that adversely affect their performance". Additionally, it highlights the fact that institutions have created specialised programmes for women entrepreneurs and how, particularly in recent years, these programmes have improved the socioeconomic circumstances of women entrepreneurs.*

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## Introduction

Any society's status and treatment of women are a barometer of its level of civilization. Women should be treated equally with men in the development process. Women are primarily responsible for their families' survival, yet they are often ignored and devalued since they are seen as inferior. Family has emerged as a key source of support since it enables women to participate appropriately in the production sector and also has market inclinations in this area. When a woman has more power, it is not uncomfortable for another person to lose power or have less authority. On the other hand, a woman's capacity for decision-making will confidently impact her family's behaviour if she is empowered.

Indian women have not had the anticipated success in society. Until the position and role of women are improved, the country won't be able to have an edge over other countries.

Although small in size, small-scale enterprises are important to the Indian economy. Small-scale industries (SSI) are crucial to the nation's industrialization. It is seen as a very important way to stop a small number of people from having too much economic power and to spread out economic power and income more evenly across the country.

Entrepreneurs have been credited for starting and supporting the socioeconomic growth of every nation on the globe. They are proof that nations with a disproportionately larger number of entrepreneurs in their population have advanced more quickly than nations with a lower proportion of entrepreneurs in their population. Entrepreneurs see innovation as a chance to take advantage of a situation, "mobilise resources and managerial abilities, and take calculated risks to create markets for new goods, procedures, and services".

Numerous government studies and financial institutions have discussed how barriers like family responsibilities and a lack of proper psychological makeup on the part of women themselves influence women entrepreneurs in small companies and force them into unfavourable environments. However, limitations, in particular the absence of short- and long-term loan facilities, continue to be the key area of concern for policymakers. The government indeed spends a lot of money on programmes to help women, but their effectiveness is limited. Since this is the case, it is important to understand how these elements affect the growth of women's entrepreneurship.

### **The concept of female entrepreneurs**

"Women entrepreneurs are individuals or groups of individuals who start, plan, and manage a company". Women who invent, copy, or adopt a business activity are referred to as "women entrepreneurs" in terms of the Schumpeterian idea of innovative entrepreneurs.

A women's entrepreneur, according to the definition given by the Indian government, is "an business owned and managed by a woman, with a minimum financial investment of 51% of the capital and providing at least 51% of the employment produced in the firm to the female labour force."

### **The Current Status of Indian Women Entrepreneurs**

Since the turn of the twenty-first century, rising industry, urbanisation, and social laws have all impacted women's position in India. Over time, a lot more women are going to college, getting technical training, and getting professional degrees. Also, a lot more women are working.

"With the growth of education and awareness, women moved from the kitchen, handicrafts, and traditional cottage industries to non-traditional higher levels of occupation." The need for women to undertake specific entrepreneurial training programmes that allow them to launch their own companies has also received considerable weight from the government. Banks and financial institutions have also established specific cells to support female entrepreneurs. Despite the fact that many women's entrepreneurship ventures continue to be a greatly underserved industry, this has helped women entrepreneurs return to the economic scene in recent years.

### **Literature Review**

The issues and obstacles experienced by women entrepreneurs in India were outlined by Singh and Raina (2013), who also analysed the policies of the Indian government on behalf of women. Women business owners in India were the primary focus of this research. Women entrepreneurs are on the rise in contemporary India, according to the study's findings. Indian women, it was noted, have carved out a niche for themselves in a traditionally male-dominated field. It was another piece of evidence that Indian women can successfully balance personal responsibilities with professional obligations.

Women entrepreneurs in Tanzania's Dar es Salaam city were the focus of a SWOT analysis conducted by Benard and Victor (2013). A random sampling method was used to choose a sample of 130 female entrepreneurs for the research. The survey identified the demand for economic autonomy as a key strength of female business owners. Women's ambition to be their own boss was also highlighted as a key opportunity. It was also discovered that most female entrepreneurs fail due to a lack of education and that the burden of caring for children at home poses the greatest danger.

B. Siddappa (2012) analysed the results of four randomly chosen SHGs and drawing conclusions about the positive or negative effects that forestry has on women's empowerment. It was discovered in his research that the women who benefited from his programme saw an increase in their sense of self-worth, which in turn led to an enhancement of their skill set, which ultimately helped them achieve more economic autonomy and social standing.

This research aims to explore methods and policies that might create an enabling environment for women entrepreneurs in India, as explained by the author, Hina Shah (2013). Its goal is to provide a collection of ideas that policymakers may use to encourage the flourishing of women-owned businesses and entrepreneurial endeavours. Despite being a significant driver of economic development, women's entrepreneurship in India has gotten little governmental attention until now. The study drew on secondary sources and previous studies, while primary data was gathered through a structured questionnaire administered to 63 female entrepreneurs in 12 different states across India. In addition, case studies of thriving female entrepreneurs were done, and the data they yielded helped shape the study's examination of the context in which female entrepreneurs work and the obstacles they confront. Combining work and family life is a struggle for the vast majority of women entrepreneurs, and the research reveals that sociocultural factors are a significant obstacle to women's entrepreneurship. The survey found that just a tiny percentage of women had sought aid via government schemes and programmes, with the vast majority of support coming from informal sources. The research finishes with several suggestions for improving conditions for women business owners in India.

According to Gnanadhas and Jesurjan (2011), the most common motivations for women to start their own businesses are the following: the desire for financial independence; the desire to work for someone rather than stay at home; the desire to pursue a personal interest; the desire to be proud of one's wealthy creation; the desire to carry on a family business; the desire to be sensitive to a business opportunity; the lack of available jobs in the area; the lack of financial resources; the desire to support a family; the desire to support a family; the desire to be the

According to a study conducted by L. Marulasiddappa (2015) "76% of respondents had obtained a loan from one or more sources like financial institutions, money lenders, or friends and family, but 24% of respondents completely depended on their own investment", into the government and institutional support for women entrepreneurs. Moreover, he proposes that women business owners get instruction on relaxation techniques, techniques for coping with stress, gender equality, and the like. Women need to be empowered on all fronts, including psychologically, ethically, socially, economically, educationally, and politically, so it is essential that women get training in activity coordination, with the finest instruction coming from courses on entrepreneurial resource planning.

The research by Abdel Hafiez Ali and Ali Yassin Sheikh Ali (2013) sought to answer the question, "Why do Somali women join into entrepreneurship?" by examining the demographics of Somali women who had chosen this path. According to the findings of this cross-sectional survey done using a questionnaire, women entrepreneurs in Benadir are driven by a desire for financial independence, professional fulfilment, and autonomy. Somali women business owners in the Benadir area should have access to microfinance initiatives as a means of obtaining capital for their enterprises.

According to Savita Joshi (2013), women's entrepreneurship is crucial to a country's economic and industrial success. Since women make up over half of the population, encouraging their participation in the business world is crucial to any country's efforts to prosper economically. The primary needs for industrial growth are promoting women in business and providing high-quality business development services. Women are becoming a significant economic factor that policymakers cannot ignore. Approximately 13%–14% of India's projected total of entrepreneurs are women, and that figure is expected to expand each year. Current statistics suggest that in only five years, female entrepreneurs will make up 20% of the workforce. In India, the SSI industry has been a driving force behind the rise of successful female entrepreneurs.

According to P. Naga Jyothi's (2014) research, entrepreneurship is essential to national progress. Human resource development, including the promotion of female entrepreneurship, is crucial. The plight of the working woman and the rights of women generally have been brought to the forefront of public consciousness. Now more than ever, women may be found at the top of their chosen fields, whether it be as a stay-at-home mom, a professor, a lawyer, a scientist, a politician, a pilot, an engineer, or It's true that women are better equipped than men to run households, but that begs the question: If she can run a household well, why can't she run a company well, too? However, women's economic performance varies widely among nations. In India, particularly in rural regions, the number of women who start their own businesses is shockingly low. The article discusses what the government is doing to help women succeed in business. It also talks about the position of women entrepreneurs and the problems they face when starting their businesses in today's competitive market.

In her work, Preeti R. Rajguru (2014) addresses whether an individual's knowledge and skills are sufficient to take risks and handle the pressures of creative practice. From the perspective of economic growth, educating women in India about entrepreneurship is a crucial step. Although more women than ever are college educated, most of those with a degree still choose secure employment over business ownership. They have tremendous potential to become entrepreneurs, but they do not pursue the field as a job for various reasons (including a lack of knowledge about the field, poor confidence in their abilities, and an aversion to taking risks). Therefore, educational institutions may help nurture women's entrepreneurialism. Therefore, this article aims to argue for the need to provide women with an education in entrepreneurship to foster the development of prosperous female business owners.

J. Krithika (2014) found that gender plays a significant role in women's health. He suggests that the growth plans be built around three main points: more money, better marketing skills, and more advanced technology.

## Objective

The objective of the study is “to identify the socio-economic factors that limits the women to entry into Enterprenurship and those adversely affect their performance”.

## Methodology

The study is based on both secondary and primary data. In the macro approach various elements of women Enterprenurs, will have been examined with the help of secondary data. While evaluating the women Enterprenurship in small scale industrieswomen Enterprenurship survey method has been adopted.

Study Area: Present study is focusing its attention on women enterprises in Delhi/NCR.

Respondents: Women entrepreneurs of SSI were picked randomly without prejudice.

Sample size: “A sample size of 300 was chosen at the beginning of this study. But only entirely completed questionnaires have been taken into consideration, which totals of 215”.

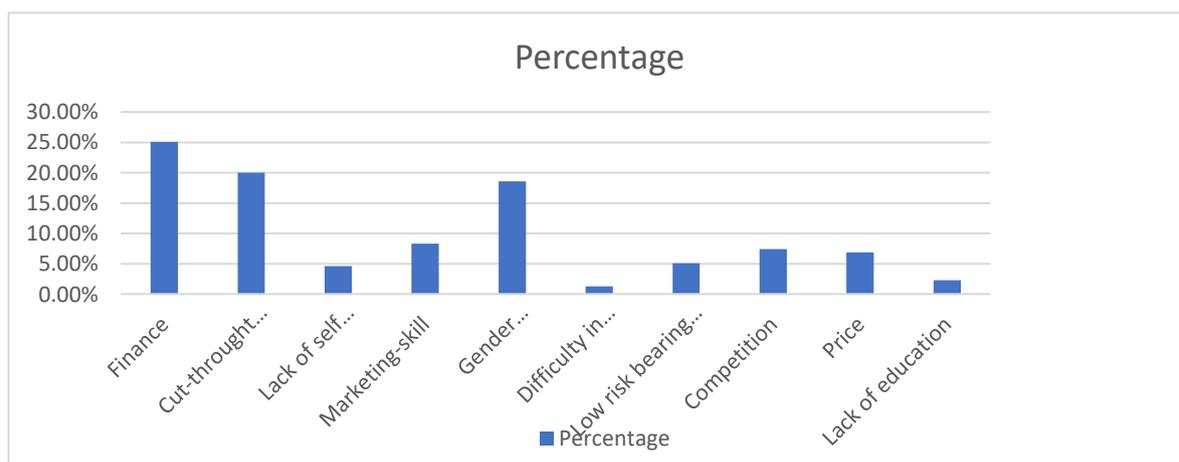
Sample Design: Primary data has been collected by using multi stage sampling technique.

Data Coding: The researcher used simple technique of percentage and averages and applied Likert scale and women empowerment index as well as composite index. MS Excel has been used for both data coding as well as data transcription.

## Data Analysis

Table-1 :Women Enterprises Problems faced in SSI Unit

“Sl. No.	Problems	No. of respondents	Percent”
1	“Finance	54	25.11
2	Cut-throught competition	43	20.0
3	Lack of self confidence	10	4.6
4	Marketing-skill	18	8.3
5	Gender Discrimination	40	18.6
6	Difficulty in procurement of raw materials	03	1.3
7	Low risk bearing Capacity	11	5.1
8	Competition	16	7.4
9	Price	15	6.9
10	Lack of education”	05	2.3
	Total	215	100.0



The women-owned businesses in SSI Units are dealing with a lot of difficulties. A selection of them is shown in table 1. 25.1% of the 215 respondents reported having financial difficulties, indicating that the “banking institutions’ financial resources were insufficient to manage the SSI units”. The business of women SSI units is being negatively impacted by the severe cut-through competition that 20.0% of respondents are experiencing from their closest competitors, who are luring clients by offering goods and services at prices that are competitively cheaper than their counterparts. 4.6% of respondents lack bravery or trust in their own SSI units, which is hindering the growth of their businesses. Today’s women-owned businesses desperately need such skills for survival, and 8.3% of them have been striving to improve their marketing forecasting skills in their units. 18.6% of respondents reported having issues with gender discrimination, which suggests that despite the units’ willingness to provide their services, men do not use them since the units are run by women. 1.3% of respondents reported having trouble procuring raw materials in a timely manner, and 5.1% reported having trouble finding the guts to deal with unexpected “risks in their businesses, particularly pricing risk, financial risk, and administrative risk”. 7.4% of respondents reported that they were subject to intense competition from their opponent’s organisation, which discouraged the weak units in the research area. 6.9% of respondents have been facing the issue of illiteracy because they do not possess the required qualifications in their units. Finally, “the 2.3 respondents have been facing the issue of high cost in their units, which is leading to a high price compared to the counterpart units and such an atmosphere affecting the business improvement”.

**Family Support to respondents**

A significant social institution is the family. The following table examines the family support for women-owned businesses. Based on the results, we concluded that this institution provides strong support for women-owned businesses. The average score of this institution among the 215 respondents was 6.87 out of 10, and the percentage of support was 68.7.

- Out of 10,
- 28 women respondents gave score of 7.5.
- 111 women respondents gave score of 7.0.
- 71 women respondents gave score of 6.5.
- 5 women respondents gave score of 6.0.

**Support from the Banking**

The 215 respondents Support from the Banking “average score was 4 out of 10, and the banking support provided to the chosen women-owned businesses was 47.7% (table 3). This indicates that the institution’s support is modest”.

Table 2: Support from the Banking

“Women units	X individual given score out of 10	average total score and percentage of the support”
“28	X7.5	210”
“111	X7.0	777”
“71	X6.5	461”
“5	X6.0	30”
215	X6.75	68.7 %

(1478/215=6.87 therefore 68.7 Percent)

- Out of 10,
- “177 women respondents gave score of 5.
- 27 women respondents gave score of 4.0.
- 11 women respondents gave score of 3.0”.

**Support from the Government**

Table 3: Support from the Government

"Women units	X individual given score out of 10	average total score and percentage of the support"
"177	X5.0	885"
"27	X4.0	108"
"11	X3.0	33"
215	4	47.7%

Another organisation that helps, the government is one that was instrumental in the formulation of laws that encourage women-owned businesses and are aiding the general growth of women SSI units. The 215 respondents' average government support rating was 4.1 out of 10, translating to a 46 percent . Table 4 demonstrates that the government's assistance to the 215 borrowers is below 50%; as a consequence, the government's assistance to the respondents was low. It has been noted that the advantages of the government initiatives have not reached the targeted recipients to the intended degree. Furthermore, the beneficiaries have voiced their displeasure with government officials who consistently take advantage of government measures.

(1026/215=4.77 therefore 47.7 Percent)

Out of 10,

49 women respondents gave score of 5.5.

129 women respondents gave score of 4.5.

24 women respondents gave score of 4.0.

10 women respondents gave score of 3.5.

3 women respondents gave score of 3.0.

### Marketing Assistance

Another type of support needed by women-owned businesses to establish their own SSI units in the market is marketing assistance. This is because, without the market's assistance in the form of purchases of ISB products or services, only the women-owned businesses are able to stand on their own, and the success of the SSI units is ultimately due to this market assistance. As a result, the 215 respondents' overall average score for marketing support was "5 out of 10, and this institution's support was 56.4 percent, which is modest (Table 5)". The family support score was the highest of the four institutional support outcomes, followed by "the marketing institutions' support for the women's SSI units and the remaining government institution scores," which were both extremely low (below 50%). One of the key institutions affected by all of these outcomes, the government, has been conclusively shown to gain from different government programmes via various groups of "higher-level government officials and non-officials", up until and unless the government checks for leaks of this kind.

Table 4: Marketing Assistance

"Women units	X individual given score out of 10	Average total score and percentage of the support"
"49	X 5.5	269.5"
"129	X 4.5	580.5"
"24	X 4.0	96"
"10	X 3.5	35"
"03	X 3.0	9"
15	4.1	46 %

(990/215=4.60 therefore 46 Percent)

Out of 10,  
 "118 women respondents gave score of 6.0.  
 58 women respondents gave score of 5.5.  
 27 women respondents gave score of 5.0.  
 9 women respondents gave score of 4.5.  
 3 women respondents gave score of 4.0".

The degree of empowerment in women enterprises

Table 5: Degree of empowerment in women enterprises

"women units	X individual given score out of 10	average total score and percentage of the support"
"118	X 6.0	708"
"58	X 5.5	319"
"27	X 5.0	135"
"9	X 4.5	40.5"
"03	X 4.0	12"
215	5	56.4 Percent

( $1214.5/215=5.64$  therefore 56.4 Percent)

The advancement of the country in general and the success of women-owned businesses in particular depend on the integration of women's growth and their empowerment. Women's empowerment is a process that deals with the sources and organisation of the SSI units' power. The process of empowerment has to be effective on both group and individual level. Poor women cannot overcome all obstacles on an individual level; they can only do it together. As a result, it is argued that women ought to organise and enlist the aid of political forces. It requires procedures for maintaining the varied gains, control over resources, and equitable involvement in decision-making. Since the units now more than ever need particular attention, organising women via the creation of women's business organisations is necessary.

The non-profit organisation is a crucial tool for empowering women. forming organisations of low-income women in order to profit from their success. The organisation helps women gain the self-assurance and expertise they need to elevate their standing and influence societal perceptions of women. After the organisation was established, the ladies felt more confident and were better able to interact with others, including their well-wishers. In contrast to the formerly uneven environment, they now feel equal to others.

"The empowerment index, which is based on a five-point Likert scale, was used to gauge the degree of empowerment".

Ten factors were utilised to determine the degree to which women are competent to make decisions for themselves, indicating "their degree of agreement or disagreement with each variable. Strongly agree- two , agree- one, uncertain- zero, disagree- two , and strongly disagree- one".

The frequencies for the various options for each variable were then counted. After multiplying each frequency by its corresponding point value, the total score was divided by the overall number of women-owned businesses. Thus, "the empowerment index was shown. The composite index was created by dividing the empowerment index by the number of factors (10)".

"To analyse the extent of women empowerment the following decision criteria was used".

"Zero and below zero = no empowerment.

Between zero and below 33.33 = low empowerment.

Between 33.33 and 66.67 = Moderate empowerment.  
Above 66.67 = High empowerment.”

Table -6 :Women Empowerment Index

“Sl. No.	Empowerment	SA	A	NO	D	SD	“EI”
1	“Self confidence	65	67	48	19	16	66.20
2	Social Status	67	66	46	21	15	68.25
3	Mobility	61	65	43	27	19	56.64
4	Involvement in public	66	68	48	17	16	70.02
5	Awareness in legal & political Activities matters	51	54	48	32	30	28.49
6	Decisionmakinginfamily	63	67	43	25	17	61.35
7	Hea1th&Hygiene	65	66	49	17	18	65.10
8	Leadership	58	56	48	32	21	45.43
9	Communication	67	68	54	10	16	73.82
10	Creativity”	65	64	41	25	20	58.02
Composite index							59.332

The following table shows that the composite index for empowering women through business was 59.33, which is below the 66.67 threshold. Based on this finding, its concluded that the respondents only had a moderate amount of empowerment. The average indexes among the variables ranged from 28.49 at the lowest to 73.82 at the highest. The variable communication had the greatest average index (73.82) while political and legal awareness had the lowest average value (28.49%). Women-owned businesses give their employees plenty of opportunity to voice their opinions, especially during association meetings. This is the primary driver of “moderate empowerment in the field of communication.” Six of the ten factors, or more than 60.34, indicate a high level of empowerment. One variable, or less than 33.33, indicates a “low level of empowerment (awareness in legal & political Activities matters).” According to the respondents, the primary reason they are not interested in learning about legal and political issues is the mental strain brought on by their dual responsibilities to their family and the SSI unit.

### Conclusion and Suggestions

It may be said that “the degree of women's empowerment attained via the SSI units is modest since the composite index for SSI women's empowerment was lower than 66.67”. However, the process of empowerment is ongoing and will take some time. It is hoped that in the near future, the women's SSI units will be required to perform at a high level.

Their empowerment was significantly impacted by the women's SSI units' performance. The majority of respondents were successful in increasing their income and savings to a reasonable level and making contributions to their families' well-being. The good effects can only do so much to improve the lives of the respondents and their families.

Women-owned businesses should start the action plan-making process by focusing on a few key areas: a) setting basic business goals, b) identifying potential business challenges and opportunities, c) identifying the target market and competitors, and d) taking into account and planning all of the operational and financial needs of units to reach their goals.

The Department of Women and Children's Welfare Development must take all necessary steps by formulating the appropriate policies to address the problems of women enterprises. Educational institutions to overcome these problems should develop the necessary training programmes through regular orientation or refresher courses or workshops.

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## Seasonal effects on stock markets

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### Keywords:

Interest rate smoothing, macroeconomics, seasonality, seasonal affective disorder, stock market

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### Abstract<sup>1</sup>

*We revisit factors associated with seasonality of stock markets. We find that interest rates and their seasonal components exhibit a strong relationship with returns and that association is more pronounced in countries, where interest rate seasonality is generally small. Additionally, using difference-in-difference estimation, we add to the growing evidence of increased synchronicity among countries belonging to the European Monetary Union. While we find strong evidence for stock market relationship with economic factors, our sample exhibits little indication that changing risk preferences throughout the year affect seasonality in stock returns.*

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### 1. Introduction

Stock market movements have been examined extensively over the past decades. The seasonal phenomena attributed to particularly large returns in the winter months have been credited to tax-loss selling (January effect), weather effects, and seasonally changing risk preferences (seasonal affective disorder or SAD) in the United States and internationally<sup>2</sup>. At the same time, a separate stream of research has thoroughly documented the capital market relationship with real economic activity and interest rates.<sup>3</sup> This activity varies significantly across the year and business cycle and the stock markets reflect that seasonal variation.

This study aims to disentangle the seasonal effect of weather and risk preferences from economic factors influencing returns across countries. Such factors include short-term interest rates, monetary base, industrial production, inflation, and foreign exchange rates. We use a panel of 34 countries between 1973 and 2015 to test the relationship between the stock returns, macroeconomic factors, and other effects. First, we test whether our data yields similar results to those in Kamstra et al (2003, 2012). We follow Kamstra et al. (2012) and use a panel approach to allow for contemporaneous correlation of residuals and increase the power of our tests. We replicate Kamstra et al. (2003) and find a positive and significant relationship between stock returns and the SAD effect, confirming the hypothesis that investors move away from risky investments as SAD increases in the fall and go back to riskier allocations in winter, when SAD occurrence decreases.

Next, in addition to weather and SAD, we test whether stock market returns are associated with macroeconomic variables previously shown to affect asset prices such as interest rates, monetary base, industrial production, consumer price index and foreign exchange rates. We additionally control for high-cash demand around the Holiday season with a December dummy and for business cycle with a recession dummy, since seasonality behaves differently during recessions and expansions. While we confirm the negative stock return relationship with the change in interest rates and monetary base, we do not find a significant effect of SAD when regressed with macroeconomic controls. We further split key macroeconomic variables into their seasonal and seasonally-adjusted components and find a negative and significant relationship between the stock returns and seasonally-adjusted changes in interest rates and

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<sup>1</sup> The author would like to thank Gary Richardson, John Wald, and seminar participants at the University of Texas at San Antonio for helpful comments on earlier versions of this paper.

<sup>2</sup> See Agrawal and Tandon (1994), Himschleifer and Shumway (2003), Cooper, McConnell and Ovtchinnikov (2006), McTier et al. (2013) for discussion on weather effects, tax-loss selling and others, on the stock markets.

<sup>3</sup> See Clark (1986), Fama and Schwert (1977), Fama (1981), Geske and Roll (1983), Solnik (1983), James et al (1985) for discussion on negative interest rate relationship with equity returns and macroeconomic dynamics.

the monetary base. Additionally, we find a highly significant and positive relationship between the stock returns and the seasonal component of interest rates.

What is more, we check whether seasonal effects of key variables increase with the degree of seasonal smoothing of interest rates. We find that stock returns in countries that smooth interest rates more are more sensitive to interest rate changes. Finally, we compare the interest rate effect between countries that joined the European Monetary Union (hereafter EMU) and countries that did not, but are located at a similar latitude. We find that countries that joined the Euro zone exhibit higher stock market sensitivity to interest rate changes than the control countries. Given that the European Central Bank pursues a policy of very stable interest rates (Cesares, 2006), this result is consistent with our prior findings that the interest rate effect on the stock market increases as the seasonal variation in interest rates decreases.

The remainder of this paper is organized as follows: Section 2 gives background on SAD and macroeconomic activity literature. Section 3 provides hypothesis. Section 4 discusses data and methods used. Section 5 presents empirical results. Section 6 concludes.

## 2. Seasonal affective disorder and macroeconomic activity

In a series of articles Kamstra et al (2003, 2011, 2012) model differences in seasonal variation of daylight across countries. They hypothesize that the number of hours of daylight influences human sentiment and risk tolerance, which affect trading patterns and thus stock returns. Seasonal Affective Disorder (hereafter SAD) is clinically defined as a form of major depressive disorder. Kamstra et al (2003) note the SAD-induced seasonal pattern, where depressed investors get away from risky allocations in the fall and go back to more risky alternatives in the winter, when days become longer and SAD occurrence declines. This behavior leads to lower returns in the fall and higher returns in the winter across all, but one of the nine countries they considered. The authors conclude that SAD contributes to seasonality of stock returns and the effect is more pronounced the higher the latitude of the countries considered.

Interestingly, the seasonal pattern of money demand and interest rates is quite similar to that of the SAD incidence. Short-term interest rates are very seasonal due to production factors and an increased demand for money in the second half of the year (Chatterjee, 1993). Harvest at the end of the summer, increased manufacturing activity picking up midyear and peaking around September and the holiday shopping season in the last quarter of the year all contribute to the gradual increase in interest rates up until January-February when SAD also peaks. The seasonal variation is most pronounced at short maturities such as Treasury bills and money market instruments (Diller, 1970).

In the United States the Federal Reserve Bank has adjusted the supply of money in order to reduce seasonality in interest rates since its inception in 1914. After the suspension of the World War II interest rate peg, the Federal Reserve temporarily ceased its smoothing efforts between 1950s and 1960s. During that time, seasonal swings as large as 20% of the mean level of interest rates could be observed (Diller 1970). This pattern became less pronounced after the Federal Reserve resumed interest-rate-smoothing by adjusting the supply of bank reserves, money and credit via open market operations and today we observe seasonal swings not larger than 1%. Central banks internationally use different policy tools to smooth short-term interest rates or do not smooth at all. For example, since its inception the European Central Bank has pursued a cautious policy of very stable interest rates much less volatile than the U.S. interest rates (Cesares, 2006.) The resulting variation in seasonal prices may propel flow of funds between countries and further balance interest rate seasonal and foreign exchange rates (Truman, 1986.)

## 3 Hypotheses

The relationship between short-term interest rates and stock market returns is well-documented<sup>4</sup>. Fama (1981) and Geske and Roll (1983) discuss linkages between stock returns, interest rates, monetary policy, and real activity. They argue that stock returns respond to changes in money supply, which respond to changes in real activity. An increase in expected real activity leads to an increase in money balances, and thus an increase in stock market returns. Additionally, Geske and Roll (1983) hypothesize

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<sup>4</sup> See Body (1976), Jaffe and Mandelker (1976) and Fama and Schwert (1977) discussing the negative relationship of interest rates in the post-1953 period.

that the increases in money supply growth caused by real activity, leads to a drop in interest rates, and this causes the negative relationship between interest rates and stock market returns. Numerous studies confirmed these results, including James et al. (1985) for the U.S. and Solnik (1983) internationally. Therefore, the documented effects of the SAD disorder on stock markets in prior papers may be simply picking up seasonal economic activity.

Hypothesis 1: Real economic activity is seasonal and thus short-term credit and stock markets will exhibit seasonal variation unrelated to SAD.

1 Along with testing SAD and weather variables as in Kamstra et al (2003) we test the relationship between macroeconomic variables as in Fama (1981) and Geske and Roll (1983). We expect positive relationship between increases in industrial production and negative relationship between changes in monetary base and interest rates and weaker relationship between SAD and stock market returns.

2 What is more, when examining the pattern of US interest rate seasonality, September-October is when the seasonal component steadily grows and peaks in December-January. In addition to controlling for real activity, we control for spending around the Holiday season, which tends to be particularly high in December. Since seasonality behaves differently during expansions and recessions (Jaditz, 1994) we further control for recessions in our tests.

3 In the United States the Federal Reserve smooths short-term interest rates by controlling growth in monetary base. While some central banks around the world engage in similar smoothing operations, others do not. In today's global economy, the resulting variations in seasonal interest rate smoothing drive flows of short-term funds between nations. Therefore, exchange rates might absorb some of the seasonal variation in interest rates and money supply through flow of funds across countries, and we control for the relationship between the stock markets and interest rates.

4 Additionally, Barro and Rush (1980) conjecture that only unanticipated changes have real effects. In countries that smooth interest rates more, seasonal interest rate variation will be less anticipated, and thus might result in stronger stock market reaction.

5

6 Hypothesis II: Seasonal component effect will be more pronounced in countries that smooth more.

7 Countries in the European Monetary Union share currency and are subject to the same monetary policy shocks. Peersman (2004) and Lehwald (2013) provide evidence for increased business cycle and output synchronization between countries in the EMU. Additionally, the Euro Area economy might be more sensitive to interest rate changes than other countries, such as the United States, since many Euro Area countries have large amount of short-term debt, higher exports as percent of GDP and higher percentage of adjustable rate mortgages (Cesares, 2006.) We would therefore expect stock markets in the EMU countries to be more sensitive to interest rate changes due to the macroeconomic environment rather than changing risk preferences and weather effects. If we control for weather and length-of-day by comparing countries at the same latitude, the only change variable between them is monetary policy. We would not expect much difference in SAD effect before and after countries joined the Euro Area, but we would expect a difference in how interest rates affect stock markets. Creation of the Euro Area in 1999 is an opportunity to compare influence of monetary policy actions before and after the event.

8

9 Hypothesis III: Countries that joined European Monetary Union will have more pronounced effect of seasonal interest rate variation than countries located at a similar latitude, but outside of the EMU unrelated to SAD.

#### 4 Data and methods

##### A. Data

Our sample encompasses 34 countries from 1973 to 2015. We obtain daily price returns data for the main stock indices in each of the countries considered from Thomson Reuters Datastream. Temperature, precipitation and cloudiness data are from the National Oceanic and Atmospheric Administration

(NOAA, formerly the National Climatic Data Center) weather service. We use TEMP, PRCP and SKC variables from the NOAA, respectively. Temperature is measured in Celsius degrees; precipitation is in millimeters and cloudiness in percentage of sky cover. We gather hourly data from weather stations within a quarter degree latitude from the country's main stock exchange. Stations include airports, central parks and weather observatories. Following Hirshleifer and Shumway (2003) and Kelly and Meschke (2010) we average hourly weather data between 6 am and 4 pm. Since production varies with agricultural output, we gather annual agricultural value-added data from the World Bank. Agricultural value added is defined as value added in local currency as percentage of a country's GDP.

We obtain macroeconomic data from the International Monetary Fund. Short-term interest rates, monetary base, industrial production, consumer price index and foreign exchange rates are calculated as monthly percentage changes. Since interest rates exhibit seasonality predominantly at short maturities, such as 30-day T-bill and money market rates (Diller, 1970), we use money market rate, wherever T-bill rates are not available. Foreign exchange rate is defined as foreign currency per 1 U.S. dollar.

Seasonality acts differently in expansions and recessions (Jaditz, 1994); therefore we add a recession dummy to our regressions. We use OECD-based monthly recession indicator that equals 1 from the Peak through the Trough and 0 otherwise. We obtain the recession dummy from the Federal Reserve Economic Data (FRED). We supplement the FRED variable with a calculated dummy based on monthly percentage changes in seasonally adjusted Gross Domestic Product. The GDP is from the International Monetary Fund. We follow Kamstra et al. (2003) and calculate SAD variable as

$$SAD_{i,t} = \begin{cases} N_{i,t} - 12, & \text{in the fall or winter} \\ 0 & \text{otherwise} \end{cases} \quad (1)$$

where  $N_{i,t}$  represents number of night hours, which are calculated as

$$N_{i,t} = \begin{cases} 24 - 7.72 * \arcsin \left[ -\tan \left( \frac{2\pi * \text{latitude}}{360} \right) \tan(\lambda_t) \right] & \text{in Northern hemisphere} \\ 7.72 * \arcsin \left[ -\tan \left( \frac{2\pi * \text{latitude}}{360} \right) \tan(\lambda_t) \right] & \text{in Southern hemisphere} \end{cases} \quad (2)$$

where arcsin and tan are arc cosine and tangent functions, respectively. Gamma  $\lambda_t$  is calculated as

$$\lambda_t = 0.4102 * \sin \left[ \left( \frac{2\pi}{365} \right) (\text{julian}_t - 80.25) \right] \quad (3)$$

$\text{Julian}_t$  represents the number of consecutive days in the year, ranging from 1 to 365 (366 in leap year).  $\text{Julian}_t$  equals 1 on January 1<sup>st</sup>, 32 on February 1<sup>st</sup>, and so on.

We also include dummies as in Kamstra et al. (2003). Monday dummy that equals 1 when the trading day follows a weekend, and 0 otherwise, and Fall dummy that equals 1 in the fall and 0 otherwise<sup>5</sup>. Tax dummy equals 1 for a given country on the last trading day and the first 5 trading days of the tax year<sup>6</sup>.

#### B. Methods

In order to examine the effect of seasonality of economic variables we split interest rates, monetary base, industrial production, consumer price index and foreign exchange into seasonal and seasonally adjusted components. We use X11/X13 seasonal adjustment methods developed by Fredrick R. Macaulay of the U.S. National Bureau of Economic Analysis and adapted to R software by Christoph Sax. The X11/X13 seasonal package uses iterative ratio-to-moving-average approach to estimate time series components by approximating trend, seasonal, irregular and seasonally adjusted components. We calculate seasonality by subtracting seasonally adjusted variable from the non-seasonally-adjusted one.

We first replicate Kamstra et al. (2003) model using panel data in order to ensure replicability of the original results on data spanning extended number of years and countries. We regress returns on SAD, temperature, precipitation, cloudiness, fall dummy, Monday dummy, tax dummy and two lags of returns (to control for residual autocorrelation).

$$r_{it} = \alpha + \beta_1 SAD_{it} + \beta_2 Temp_{it} + \beta_3 Prcp_{it} + \beta_4 CLD_{it} + \beta_5 D\_Fall_{it} +$$

<sup>5</sup> In Northern Hemisphere fall and winter are defined from September 21<sup>st</sup> to December 20<sup>th</sup> and December 21<sup>st</sup> to March 20<sup>th</sup>, respectively. In Southern Hemisphere fall and winter are defined from March 21<sup>st</sup> to June 20<sup>th</sup> and June 21<sup>st</sup> to September 20<sup>th</sup>, respectively.

<sup>6</sup> Fiscal year begins on March 1<sup>st</sup> in South Africa, April 1<sup>st</sup> in India, New Zealand, Sri Lanka, Hong Kong and Japan, April 6<sup>th</sup> in Ireland and United Kingdom, and January 1<sup>st</sup> in other countries in the sample.

$$+ \beta_6 D\_Monday_{it} + \beta_7 D\_Tax_{it} + \beta_8 r_{it-1} + \beta_9 r_{it-2} + \varepsilon_{it} \tag{4}$$

We build on the Kamstra et al. (2003) model and add additional controls and macroeconomic variables to it. We regress returns on short-term interest rates, monetary base, industrial production, consumer price index, foreign exchange, agricultural value added, recession dummy, December dummy, SAD, fall dummy, Monday dummy, tax dummy, and two returns lags.

$$r_{it} = \alpha + \beta_1 INT_{it} + \beta_2 MB_{it} + \beta_3 IP_{it} + \beta_4 CPI_{it} + \beta_5 FX_{it} + \beta_6 AGR_{it} + \beta_7 SAD_{it} + \beta_8 Temp_{it} + \beta_9 Prcp_{it} + \beta_{10} CLD_{it} + \beta_{11} D\_December_{it} + \beta_{12} D\_Recession_{it} + \beta_{13} D\_Fall_{it} + \beta_{14} D\_Monday_{it} + \beta_{15} D\_Tax_{it} + \beta_{16} r_{it-1} + \beta_{17} r_{it-2} + \varepsilon_{it} \tag{5}$$

Next, we test the effect of seasonality of macroeconomic components on the stock market by regressing returns on seasonal components of interest rates, monetary base, industrial production, consumer price index and foreign exchange, and their respective seasonally adjusted components, in addition to the previously used controls agricultural value added, recession dummy, December dummy, SAD, fall dummy, Monday dummy, tax dummy, and two returns lags.

$$r_{it} = \alpha + \beta_s INT_{it} + \beta_{s\_adj} INT_{it} + \beta_s MB_{it} + \beta_{s\_adj} MB_{it} + \beta_s IP_{it} + \beta_{s\_adj} IP_{it} + \beta_s CPI_{it} + \beta_{s\_adj} CPI_{it} + \beta_s FX_{it} + \beta_s AGR_{it} + \beta_s SAD_{it} + \beta_s Temp_{it} + \beta_s Prcp_{it} + \beta_s CLD_{it} + \beta_s D\_December_{it} + \beta_s D\_Recession_{it} + \beta_s D\_Fall_{it} + \beta_s D\_Monday_{it} + \beta_s D\_Tax_{it} + \beta_s r_{it-1} + \beta_s r_{it-2} + \varepsilon_{it} \tag{6}$$

Since interest rates are highly seasonal and central banks smooth those interest rates to a varying degree, we test whether the seasonal effect of key variables differs with the degree of interest rate smoothing. We calculate 12-month autocorrelation of interest rate seasonal component by country and interact it with seasonal components of interest rates, monetary base, industrial production, consumer price index, foreign exchange along with their respective seasonally-adjusted components and SAD as follows:

$$r_{Seasonal} = \beta_s INT_{it} + \beta_{s\_adj} INT_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} INT_{it} + \beta_{s\_adj} INT_{it} * seasonal\_int\_autocorrelation_i + \beta_s MB_{it} + \beta_{s\_adj} MB_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} MB_{it} + \beta_s IP_{it} + \beta_{s\_adj} IP_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} IP_{it} + \beta_s CPI_{it} + \beta_{s\_adj} CPI_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} CPI_{it} + \beta_s FX_{it} + \beta_{s\_adj} FX_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} FX_{it} + \beta_s AGR_{it} + \beta_{s\_adj} AGR_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} AGR_{it} + \beta_s SAD_{it} + \beta_{s\_adj} SAD_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} SAD_{it} + \beta_s Temp_{it} + \beta_{s\_adj} Temp_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} Temp_{it} + \beta_s Prcp_{it} + \beta_{s\_adj} Prcp_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} Prcp_{it} + \beta_s CLD_{it} + \beta_{s\_adj} CLD_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} CLD_{it} + \beta_s D\_December_{it} + \beta_{s\_adj} D\_December_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} D\_December_{it} + \beta_s D\_Recession_{it} + \beta_{s\_adj} D\_Recession_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} D\_Recession_{it} + \beta_s D\_Fall_{it} + \beta_{s\_adj} D\_Fall_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} D\_Fall_{it} + \beta_s D\_Monday_{it} + \beta_{s\_adj} D\_Monday_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} D\_Monday_{it} + \beta_s D\_Tax_{it} + \beta_{s\_adj} D\_Tax_{it} * seasonal\_int\_autocorrelation_i + \beta_{s\_adj} D\_Tax_{it} + \beta_s r_{it-1} + \beta_s r_{it-2} + \varepsilon_{it} \tag{7}$$

Finally, we use a difference-in-difference tests to check whether the interest-rate effect is different between countries that joined the European Monetary Union and those that did not. We expand equation (6) and add a triple interaction of interest rate, dummy that equals 1 for countries that joined the Euro Area, 0 otherwise (EA\_treated), and dummy that equals 1 beginning the year a country joined the Euro Area, and 0 before they joined or if they did not join the EA at all (EA). The full equation is as follows:

$$r_{it} = \alpha + \beta * INT_{it} * EA\_time_t * EA\_treated_i + \beta EA\_time_t * INT_{it} + \beta EA\_treated_i * INT_{it} + \beta EA\_time_t * EA\_treated_i + \beta MB_{it} + \beta IP_{it} + \beta CPI_{it} + CSt_{it} + \beta FX_{it} + \beta AGR_{it} + \beta SAD_{it} + \beta Temp_{it} + \beta Prcp_{it} + \beta CLD_{it} + \beta D\_Recession_{it} + \beta D\_Fall_{it} + \beta D\_Monday_{it} + \beta D\_Tax_{it} + \beta r_{it-1} + \beta r_{it-2} + \varepsilon_{it} \tag{8}$$

Equation decomposed into seasonal and seasonally adjusted components:

$$r_{it} = \alpha + \beta * sINT_{it} * EA\_time_t * EA\_treated_i + \beta EA\_time_t * sINT_{it} + \beta EA\_treated_i * sINT_{it} + \beta * s\_adjINT_{it} * EA\_time_t * EA\_treated_i + \beta EA\_time_t * s\_adjINT_{it} + \beta EA\_treated_i * s\_adjINT_{it} + \beta EA\_time_t * EA\_treated_i + \beta_s INT_{it} + \beta_{s\_adj} INT_{it} + \beta_s MB_{it} + \beta_{s\_adj} MB_{it} + \beta_s IP_{it} + \beta_{s\_adj} IP_{it} + \beta_s CPI_{it} + \beta_{s\_adj} CPI_{it} + sCSt_{it} + s\_adjCS_{it} + \beta_s FX_{it} + \beta_s AGR_{it} + \beta_s SAD_{it} + \beta_s Temp_{it} + \beta_s Prcp_{it} + \beta_s CLD_{it} + \beta_s D\_Recession_{it} + \beta_s D\_Fall_{it} + \beta_s D\_Monday_{it} + \beta_s D\_Tax_{it} + \beta_s r_{it-1} + \beta_s r_{it-2} + \varepsilon_{it} \tag{9}$$

Based on prior literature we expect to find negative coefficients on interest rates, monetary base, foreign exchange rate, cloud, precipitation, recession, Monday and fall dummies. We expect to find positive coefficients on industrial production, agricultural value added, consumer price index, SAD, temperature and December and tax dummies. Since the European Monetary Union markets tend to be more sensitive to interest rate changes, we expect a positive coefficient on the difference-in-difference estimation.

## 5. Results

Table I presents summary statistics of main variables in question. The average daily return equals 0.026% with a standard deviation of 1.235%. On average, the monthly percentage change in interest rates is quite small, less than 1 basis point, but when seasonally adjusted, interest rates are downward sloping at -0.008%. The big difference between seasonally adjusted and unadjusted interest rates is confirmed by the 12-month autocorrelation of seasonal component of interest rates. At average correlation coefficient of 0.83 we can say that interest rates across countries are quite seasonal.

Table II presents correlation coefficients between key variables. Stock returns are highly correlated with interest rates, particularly the seasonal component of interest rates, consumer price index, agricultural value added and December, Monday and tax dummies. SAD, on the other hand, is fairly highly correlated with agricultural value added, industrial production, temperature, and fall, December and tax dummies. Interestingly, SAD is quite highly correlated with agricultural value added at -0.16. However, the average agricultural value added as percentage of GDP is only 3% per year, which casts doubt on the agricultural influence on real output and its effect on the economy and the stock market.

While SAD correlations with stock returns and interest rates are rather modest, at 0.0052 and -0.0045, respectively, monthly figures of mean SAD, stock market returns, and interest rates averages and variations give a more in-depth view of seasonal patterns throughout the year. Figure 1 presents mean SAD changes throughout the year. We can see that SAD occurrence peaks around December-January each year, bottoms out in April and starts increasing in September. Figure 2 presents a comparable pattern in average stock market returns throughout the year, which is consistent with Kamstra et al. (2003).

Table I. Summary Statistics

Variable	Mean	St Dev.	Min	Max
R	0.026%	1.235%	-7.593%	7.955%
INT	0.000%	6.359%	-155.470%	381.470%
sINT	0.008%	1.340%	-61.367%	52.730%
s_adjINT	-0.008%	6.042%	-153.384%	365.716%
Seas.Autocorr.	0.8275	0.1666	0.1094	0.9730
MB	1.998%	10.231%	-63.470%	274.009%
sMB	-0.004%	6.281%	-96.809%	65.901%
s_adjMB	2.001%	7.868%	-55.744%	208.108%
IP	0.553%	9.373%	-63.786%	150.227%
sIP	-0.030%	8.746%	-56.438%	115.726%
s_adjIP	0.583%	3.551%	-27.343%	34.502%
CPI	0.293%	0.939%	-32.156%	38.380%
sCPI	0.002%	0.335%	-2.841%	2.631%
s_adjCPI	0.291%	0.867%	-31.875%	39.214%
FX	0.081%	2.872%	-23.574%	115.212%
sFX	0.002%	0.862%	-5.291%	6.383%
s_adjFX	0.078%	2.711%	-18.415%	111.741%
Agr. v.a.	2.990%	3.403%	0.035%	29.390%
SAD	1.106	1.538	-2.123	6.519
Dummy Fall	0.248	0.432	0.000	1.000
Dummy December	0.087	0.282	0.000	1.000
Recession	0.405	0.491	0.000	1.000

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Dummy Monday	0.199	0.399	0.000	1.000
Dummy Tax	0.019	0.137	0.000	1.000
TEMP	11.202	10.561	-29.306	37.407
PRCP	2.893	7.290	0.000	399.000
CLD	2.135	9.742	0.000	66.400
Observations	203,973			

---

Table II. Correlations

	1	2	3	4	5	6	7	8	9	10	11	12
R	1.0000											
SAD	0.0052	1.0000										
Agr_va	0.0107	-0.1595	1.0000									
CPI	0.0104	-0.0695	0.2536	1.0000								
FX	0.0037	-0.0088	0.0664	0.2114	1.0000							
INT	0.0095	-0.0045	0.0072	0.5326	0.1853	1.0000						
MB	0.0047	-0.0171	0.1982	0.0140	0.0639	0.0732	1.0000					
IP	-0.0028	-0.0968	0.0060	0.0110	0.0081	-0.0027	0.0120	1.0000				
s.CPI	0.0015	-0.0578	0.0010	0.4284	0.0011	0.0031	-0.0055	0.0172	1.0000			
s.adj CPI	0.0108	-0.0509	0.2792	0.9130	0.2341	0.5886	0.0179	0.0045	0.0225	1.0000		
s.FX	-0.0024	0.0239	-0.0002	-0.0105	0.2853	0.0139	0.0048	0.0388	-0.0224	-0.0014	1.0000	
s.adj FX	0.0046	-0.0154	0.0688	0.2231	0.9580	0.1909	0.0652	-0.0048	0.0076	0.2441	-0.0017	1.0000
s.MB	0.0019	0.0270	-0.0005	-0.0227	0.0032	0.0320	0.4015	0.0204	-0.0356	-0.0089	0.0148	-0.0010
s.adj MB	0.0044	-0.0308	0.2152	0.0240	0.0674	0.0719	0.9210	0.0028	0.0079	0.0229	-0.0007	0.0705
s.IP	-0.0045	-0.1072	0.0021	0.0102	0.0062	-0.0009	0.0228	0.8940	0.0209	0.0021	0.0434	-0.0083
s.adj IP	0.0027	-0.0012	0.0079	0.0037	0.0038	-0.0054	-0.0191	0.4414	-0.0037	0.0057	-0.0002	0.0040
s.INT	0.0131	-0.0046	0.0073	0.2048	0.1680	0.9645	0.0827	-0.0010	-0.0221	0.2363	0.0472	0.1623
s.adj INT	0.0083	-0.0044	0.0070	0.5240	0.1750	0.9974	0.0695	-0.0027	0.0040	0.5785	0.0099	0.1812
Dummy Fall	-0.0035	0.3211	0.0025	-0.0237	-0.0122	-0.0004	0.0265	0.0267	-0.0489	-0.0040	-0.0632	0.0059
Dummy December	0.0111	0.4140	0.0008	-0.0423	-0.0115	-0.0025	0.0679	-0.0991	-0.0937	-0.0045	-0.0195	-0.0063
Dummy Monday	-0.0174	-0.0001	0.0000	0.0004	0.0002	-0.0002	0.0006	-0.0014	0.0005	0.0002	-0.0009	0.0005

2	Dummy Tax	<b>0.0119</b>	<b>0.1313</b>	<b>-0.0001</b>	<b>-0.0029</b>	<b>-0.0001</b>	<b>-0.0012</b>	<b>0.0104</b>	<b>-0.0373</b>	<b>-0.0060</b>	<b>-0.0006</b>	<b>-0.0039</b>	<b>0.0011</b>
3	TEMP	<b>-0.0027</b>	<b>-0.4798</b>	<b>0.3768</b>	<b>0.0198</b>	<b>0.0133</b>	<b>0.0554</b>	<b>0.1429</b>	<b>0.0200</b>	<b>-0.0670</b>	<b>0.0498</b>	<b>-0.0361</b>	<b>0.0254</b>
4	PRCP	<b>-0.0058</b>	<b>-0.0409</b>	<b>0.0241</b>	<b>-0.0153</b>	<b>-0.0013</b>	<b>-0.0161</b>	<b>0.0076</b>	<b>-0.0037</b>	<b>0.0058</b>	<b>-0.0197</b>	<b>0.0006</b>	<b>-0.0016</b>
5	CLD	<b>-0.0002</b>	<b>0.0264</b>	<b>-0.0790</b>	<b>0.0021</b>	<b>-0.0163</b>	<b>0.0165</b>	<b>-0.0528</b>	<b>-0.0129</b>	<b>-0.0022</b>	<b>0.0032</b>	<b>0.0005</b>	<b>-0.0173</b>

Correlation coefficients reported in bold are significant at the 5% level.

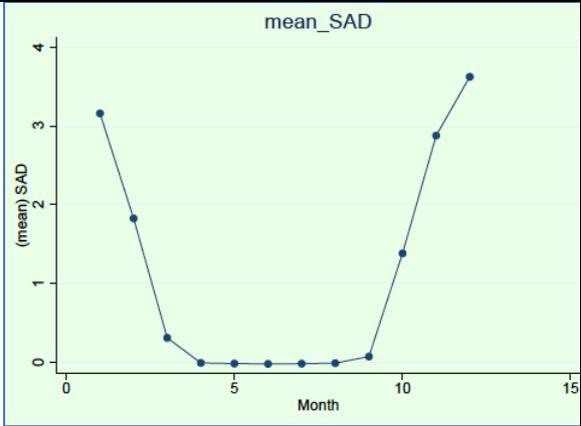


Figure 1. Mean SAD from January to December



Figure 2. Mean stock returns from January to December

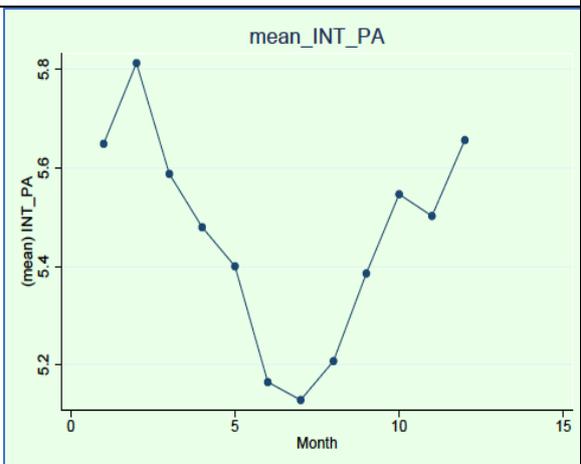


Figure 3. Mean interest rates from January to December

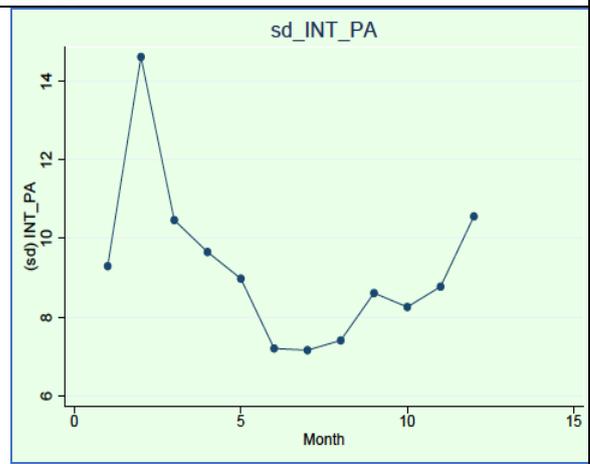


Figure 4. Variation in interest rates from January to December

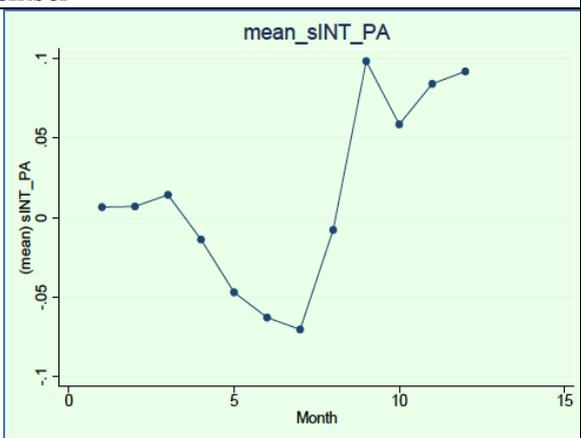


Figure 5. Mean interest rate seasonality from January to December

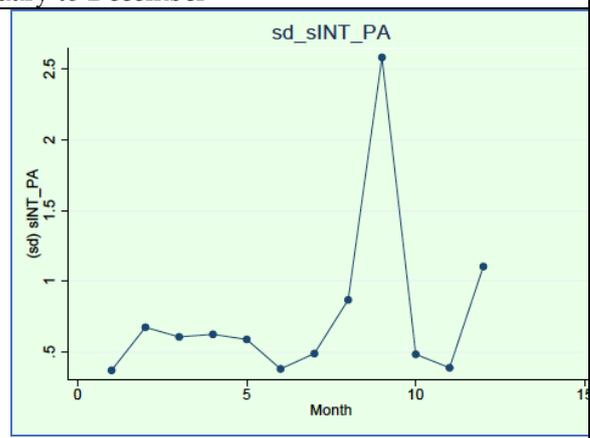


Figure 6. Variation in interest rate seasonality from January to December

Furthermore, Table III presents summary of interest rates, their seasonal component, length of night and latitude by country. According to Kamstra et al. (2003, 2012) SAD and its effect increases with latitude and thus leads to stock market seasonality. If number of daylight hours has effect on stock market, we should also expect a higher seasonal variation in interest rates at higher latitudes. However, Table III does not show a consistent pattern of increase or decrease in interest rates by country and latitude. The

seasonal variation in interest rates equals 0.19% in Finland at 60.2°N, but only 0.03% in Sweden at 59.3N°. Similarly, seasonal variation in interest rates is at 0.31% in Canada at 43.6°N, but at 5.42% in Romania at 44.4°N. Figures 3-6 show a more consistent pattern of monthly changes due to changes in seasons of production, rather than changes due to varying sun exposure.

Table III. Summary by Country

Country	Sample		Night Hours		Interest seasonality		Seasonal Autocorr.
	Size	Latitude	Min	Max	Mean	St. Dev	
Finland*	6,181	60.17N	5.2	18.5	0.00%	0.19%	0.92
Norway	3,396	59.91N	5.3	18.4	0.00%	0.13%	0.86
Estonia*	3,005	59.44N	5.5	18.3	0.00%	0.08%	0.84
Sweden	4,678	59.32N	5.5	18.2	0.00%	0.03%	0.97
Latvia*	1,207	56.95N	6.2	17.5	-0.04%	0.41%	0.57
Russia	4,743	55.76N	6.5	17.2	0.01%	6.36%	0.11
Poland	4,556	53.23N	7.1	16.7	0.04%	0.59%	0.46
Netherlands*	17,734	52.37N	7.2	16.5	0.00%	0.27%	0.69
United Kingdom	20,255	51.50N	7.4	16.3	0.00%	0.09%	0.91
Belgium*	3,511	50.85N	7.5	16.2	0.00%	0.05%	0.98
Czech Republic	5,627	50.08N	7.7	16.1	0.00%	0.09%	0.84
Germany*	9,914	50N	7.7	16.1	0.00%	0.05%	0.90
Luxembourg	3,647	49.82N	7.7	16.0	0.00%	0.04%	0.81
France*	21,928	48.86N	7.9	15.9	0.00%	0.12%	0.96
Austria*	5,491	48.20N	8.0	15.8	0.00%	0.15%	0.88
Slovakia*	5,371	48.15N	8.0	15.8	-0.02%	0.44%	0.62
Hungary	1,996	47.5N	8.1	15.7	0.02%	0.12%	0.92
Slovenia	2,274	46.06N	8.3	15.5	0.00%	0.05%	0.81
Croatia	4,920	45.82N	8.3	15.5	0.00%	0.44%	0.55
Romania	4,743	44.43N	8.5	15.3	0.02%	1.68%	0.76
Canada	2,034	43.64N	10.0	15.2	-0.02%	0.04%	0.89
Bulgaria	3,447	42.73N	8.7	15.1	0.01%	0.16%	0.95
Turkey	1,013	41.01N	8.9	14.9	0.80%	3.90%	0.57
United States	17,648	40.42N	8.9	14.8	0.01%	0.03%	0.84
Portugal*	4,405	38.72N	9.1	14.6	0.00%	0.09%	0.97
Japan	21,195	36N	9.4	14.4	0.00%	0.03%	0.96
Malta	2,033	35.9N	9.4	14.3	0.00%	0.04%	0.81
Cyprus	521	35.19N	9.5	14.3	0.00%	0.07%	0.81
Chile	1,558	33.45S	9.9	14.4	0.00%	0.04%	0.89
Mexico	6,168	19.43N	10.7	13.1	-0.03%	1.05%	0.80
India	2,525	19.08N	10.7	13.0	0.10%	1.71%	0.82
Indonesia	554	6.13S	11.8	12.5	0.04%	0.50%	0.67
Colombia	2,161	4.71N	11.6	12.2	0.00%	0.04%	0.78
Singapore	3,534	1.35N	11.8	12.0	0.00%	0.12%	0.91
EMU					0.00%	0.04%	0.81
Total	203,973		5.2	18.5	0.01%	1.34%	0.80

Table IV presents OLS panel regressions with daily returns on countries' main indexes as dependent variable. Column 1 presents a replication of Kamstra et al. (2003) model, where we regress daily returns against two lagged returns, SAD, Monday, tax and fall dummies, temperature in Celsius degrees, precipitation in milliliters per day, and percent cloudiness. Column 2 presents results of extended analysis, where in addition to regressing daily returns on lagged returns, SAD, Monday, tax and fall dummies, and weather controls, we include interest rates, monetary base, industrial production, consumer price index, foreign exchange and December and recession dummies as independent variables. Column 3 provides an analysis based on macroeconomic variables split into their seasonal and seasonally-adjusted components.

Results in Column 1 are comparable to those in Kamstra et al. (2003, 2012). We observe a positive and statistically significant SAD coefficient, which is consistent with a notion that risk-averse investors move

away from risky investments in the fall, leading to lower than average returns before winter equinox. Subsequently, when SAD occurrence is on a downward path, the investors return to more risky allocations, which leads to higher than average returns in winter. Other results are as expected as well, we observe negative returns on first weekday and on a rainy day, while returns around end of fiscal year are higher. Column 2 contains macroeconomic independent variables and additional controls and paints a different picture. While we see very similar results for all controls used by Kamstra et al., we do not observe a statistically significant relationship between SAD and stock returns. Interestingly, changes in interest rates, monetary base and foreign exchange rates are negatively related to returns and highly significant. While industrial production does not seem to have a direct relationship with the stock market, the negative relationship between the market and interest rates and monetary base is consistent with Fama (1981) and Geske and Roll (1983). While 1% increase in short-term interest rates is associated with a 0.37% decrease in stock returns, a 1% increase in monetary base is associated with a 0.06% decrease in returns internationally.

Table IV. Stock Market Sensitivity

	(1)	(2)	(3)
INT		-0.372*	
		(0.062)	
sINT			5.342***
			(0.000)
s_adjINT			-0.803***
			(0.001)
MB		-0.060*	
		(0.082)	
sMB			-0.021
			(0.681)
s_adjMB			-0.084*
			(0.092)
IP		-0.011	
		(0.727)	
sIP			-0.027
			(0.404)
s_adjIP			0.090
			(0.301)
CPI		0.965	
		(0.104)	
sCPI			2.447*
			(0.056)
s_adjCPI			0.715
			(0.241)
FX		-0.832**	
		(0.029)	
sFX			-0.345
			(0.565)
s_adjFX			-0.872**
			(0.015)
Dummy December		4.154***	4.189***
		(0.001)	(0.000)
Recession		-6.098***	-6.028***
		(0.000)	(0.000)
Agr.v.a.		0.302*	0.320*
		(0.087)	(0.098)
SAD	0.728**	0.165	0.151
	(0.017)	(0.756)	(0.778)
Dummy Monday	-5.271***	-4.517***	-4.517***

	(0.000)	(0.000)	(0.000)
Dummy Tax	7.110***	5.095*	5.140**
	(0.000)	(0.051)	(0.047)

Table IV. Continued

	(1)	(2)	(3)
TEMP	0.004 (0.906)	-0.114** (0.028)	-0.108** (0.030)
PRCP	-0.008*** (0.005)	-0.004 (0.218)	-0.004 (0.199)
CLD	0.006 (0.688)	-0.034* (0.088)	-0.031* (0.095)
Dummy Fall	-1.604*** (0.006)	-2.520** (0.026)	-2.274** (0.042)
L.R	0.085*** (0.000)	0.059*** (0.000)	0.059*** (0.000)
L2.R	0.002 (0.614)	-0.000 (0.969)	-0.000 (0.951)
Cons.	0.037*** (0.000)	0.063*** (0.000)	0.061*** (0.000)
N	448282	203973	203973
adj. R-sq	0.008	0.005	0.005

p-values in parentheses, \* p<0.10 \*\* p<0.05. Coefficients multiplied by 100 for brevity.

\*As in Kamstra et al. (2003)

What is more, a 1% increase in value of local currency against the U.S. Dollar is associated with 0.83% decrease in stock market performance, which confirms Truman's (1986) theory of variation in prices contributing to international flow of funds. Annual agricultural value added as percent of GDP is positively and significantly related to stock market returns, which is expected, as agricultural production contributes to changes in real economic activity. December dummy is positive and highly significant, confirming that returns are higher during the high cash demand time during December Holiday spending. As expected, stock returns are lower in recessionary periods.

The third regression in Table IV presents additional detail, where macroeconomic variables from Column 2 are further split into seasonal and seasonally adjusted components. While 1% change in seasonally-adjusted interest rates is associated with a 0.8% decrease in stock market returns, 1% change in seasonal component of interest rates has a much stronger effect on returns and is associated with a 5.3% increase in stock market returns. At the same time, we continue to observe an insignificant SAD coefficient, which confirms the hypothesis that seasonal short-term credit markets and stock markets exhibit seasonality unrelated to SAD. We repeat Kamstra et al. (2003) robustness check and exclude days with 0 returns in all three models and find virtually the same results.

Moreover, Barro and Rush (1980) conjecture that only unanticipated changes in economy have real effects. In countries where interest rate seasonality is low, seasonal changes would be unexpected and thus have a stronger effect. In line with this thought, we expand our analysis and examine whether the magnitude of seasonal effect of key variables increases with the degree of seasonal smoothing of interest rates. Table V presents OLS panel regression results with similar specifications to those in Columns 2-3 of Table IV. We regress daily stock market returns on weather, tax, Monday, fall, December and recession controls. Additionally, we interact SAD and macroeconomic variables with 12-month autocorrelation of interest rate seasonality by country. Column 1 presents interactions with seasonally-unadjusted interest rates, monetary base, industrial production, consumer price index, foreign exchange rate, agricultural value added and SAD. Column 2 differs from Column 1 in that 12-month autocorrelation of interest rate seasonality is interacted with interest rates, monetary base, industrial production, consumer price index and foreign exchange rate split into seasonal and seasonally-adjusted components, as well as with SAD and agricultural value added.

We observe that the negative stock market relationship with interest rates is larger in countries where interest rates exhibit large seasonal swings. In countries, where 12-month autocorrelation of interest rate seasonality is close to 1, a 1% interest rate increase is associated with a 2.6% drop in stock market returns. At the same time, in countries where seasonal interest

Table V. Stock Market Returns and Seasonal Autocorrelations

	(1)	(2)
Seas.Autocorr.	0.177** (0.011)	0.177** (0.011)
INT	2.465*** (0.000)	
INT#Seas.Autocorr.	-5.089*** (0.000)	
sINT		7.231*** (0.000)
sINT#Seas.Autocorr.		-5.639 (0.133)
s_adjINT		0.151 (0.898)
s_adjINT#Seas.Autocorr.		-1.564 (0.469)
MB	0.119 (0.521)	
MB#Seas.Autocorr.	-0.225 (0.341)	
sMB		0.095 (0.579)
sMB#Seas.Autocorr.		-0.120 (0.634)
s_adjMB		0.178 (0.638)
s_adjMB#Seas.Autocorr.		-0.340 (0.469)
IP	0.247 (0.560)	
IP#Seas.Autocorr.	-0.302 (0.519)	
sIP		0.197 (0.634)
sIP#Seas.Autocorr.		-0.279 (0.547)
s_adjIP		0.401 (0.685)
s_adjIP#Seas.Autocorr.		-0.284 (0.805)
CPI	5.881** (0.034)	
CPI#Seas.Autocorr.	-6.011* (0.063)	
sCPI		9.178* (0.067)
Table V. Continued		
	(1)	(2)
sCPI#Seas.Autocorr.		-9.642* (0.083)
s_adjCPI		4.919* (0.070)
s_adjCPI#Seas.Autocorr.		-4.916

		(0.120)
FX	-3.637*** (0.001)	
FX#Seas.Autocorr.	3.575*** (0.003)	
sFX		-4.619* (0.067)
sFX#Seas.Autocorr.		5.323* (0.056)
s_adjFX		-3.357*** (0.001)
s_adjFX#Seas.Autocorr.		3.185*** (0.005)
SAD	1.404 (0.157)	1.247 (0.276)
SAD#Seas.Autocorr.	-1.254 (0.372)	-1.174 (0.456)
agr_va	3.407*** (0.003)	3.564*** (0.003)
agr_va#Seas.Autocorr.	-3.805*** (0.007)	-3.992*** (0.006)
Dummy Monday	-0.044*** (0.000)	-0.044*** (0.000)
Dummy Tax	0.068*** (0.009)	0.069*** (0.007)
Dummy Fall	-0.021* (0.061)	-0.018 (0.110)
TEMP	-0.104** (0.013)	-0.104** (0.015)
PRCP	-0.039 (0.290)	-0.038 (0.295)
CLD	-0.022* (0.057)	-0.022* (0.064)
L.R	0.061*** (0.000)	0.060*** (0.000)
L2.R	0.001 (0.775)	0.001 (0.810)
N	204164	204164
adj. R-sq	0.005	0.005

rate smoothing is more aggressive, and autocorrelation approaches 0.1, a 1% increase in interest rates is associated with almost 2% increase in stock market return.

Column 2 presents more detail on the relationship between stock market returns and interest rate seasonality. While the effect of seasonally-adjusted interest rates does not differ whether countries observe high or low seasonality, the seasonal changes in interest rates have a strong effect. We confirm that stock markets are more sensitive to seasonal interest rate changes and the magnitude of that relationship differs with the degree of seasonality in countries examined. We can see that a 1% seasonal interest rate increase in countries exhibiting high seasonal swings (autocorrelation approaches 1) is associated with a 1.59% increase in stock market return. On the other hand, countries where interest rates do not exhibit much variation from month to month, a 1% increase in such variation is associated with a 6.67% increase in stock market return. In other words, the surprise factor more than triples the magnitude of seasonal stock market reaction, in countries where interest rate seasonal are not highly variable.

Furthermore, the creation of European Monetary Union (EMU) gives an opportunity to compare the effect of interest rate seasonality before and after the event. We compare the stock market relationship between countries that joined the EMU and countries that did not, but are located at a similar latitude. Table VI presents results of a difference-in-difference estimation between countries that joined the EMU

and controls. The EMU countries include Austria, Belgium, Estonia, France, Germany and Portugal, control countries include Czech Republic, Hungary, Japan, Norway, Poland, and the United Kingdom for a total of 52,058 observations. Column 1 presents results of stock market regression with difference-in-difference estimation with a triple interaction of interest rates, dummy EA\_treated that equals 1 for a country that is a EMU member and 0 otherwise, and dummy EA\_time that equals 1 beginning the year countries joined the Euro Zone and 0 otherwise. Column 2 presents estimation with triple interactions of interest rates split into the seasonal component and seasonally-adjusted component. Each model contains macroeconomic variables, SAD and controls used in prior tables.

Results in Column 1 show an increased effect of interest rates on the stock market in EMU countries after joining the Union. Column 2 shows results similar to those in Column 1. The effect of seasonally adjusted interest rates is larger in the EMU countries, but there appears to be no difference in the effect of seasonal component between countries in the Union and those outside. Results in Table VI confirm the hypothesis of a more pronounced interest rate effect in EMU countries and are consistent with findings in Table V, countries with lower seasonality are more sensitive to seasonal interest rate changes. The European Central Bank leads a cautious monetary policy with very stable interest rates (Cesares, 2006), which is confirmed in Table III. The autocorrelation of interest rate seasonal component is lower than that of control countries. The interrelations between EMU member countries, higher amounts of short-term debt and adjustable rate mortgages make their economies more sensitive to changes in interest rates, which is confirmed by our study.

Table VI. Difference in Difference in European Monetary Union

	(1)	(2)
EA_treated#EA_time#INT	38.615*	
	(0.070)	
EA_treated#EA_time#sINT		-171.303
		(0.303)
EA_treated#EA_time#s_adjINT		58.683***
		(0.003)
EA_treated#INT	-23.697	
	(0.154)	
EA_time#INT	2.032	
	(0.883)	
EA_treated#sINT		20.139
		(0.439)
EA_time#sINT		-52.940
		(0.364)
EA_treated#s_adjINT		-22.817*
		(0.058)
EA_time#s_adjINT		11.293*
		(0.093)
EA_treated	0.019	0.017
	(0.347)	(0.368)
EA_time	0.004	0.004
	(0.819)	(0.798)
EA_treated#EA_time	-0.031	-0.030
	(0.220)	(0.236)
INT	3.840	
	(0.709)	
sINT		31.541***
		(0.000)
s_adjINT		-4.295
		(0.341)
agr_va	-0.067	-0.009

	(0.893)	(0.986)
SAD	0.097	0.190
	(0.870)	(0.756)
CPI	0.450	
	(0.346)	
MB	-0.266**	
	(0.024)	
IP	-0.094*	
	(0.067)	
FX	-0.629	
	(0.113)	

Table VI. Continued

	(1)	(2)
sCPI		4.117**
		(0.015)
s_adjCPI		-0.232
		(0.765)
sMB		0.015
		(0.836)
s_adjMB		-0.515***
		(0.008)
sIP		-0.113**
		(0.022)
s_adjIP		0.086
		(0.441)
sFX		-1.146
		(0.134)
s_adjFX		-0.489
		(0.158)
Dummy Fall	-0.037**	-0.035**
	(0.019)	(0.027)
Dummy December	0.051**	0.039**
	(0.032)	(0.044)
Dummy Monday	-0.026	-0.026
	(0.280)	(0.273)
Dummy Tax	0.073*	0.064
	(0.076)	(0.115)
TEMP	-0.273***	-0.250***
	(0.001)	(0.005)
PRCP	-0.070	-0.071
	(0.337)	(0.325)
CLD	-8.635***	-8.593***
	(0.000)	(0.000)
L.R	0.055**	0.055**
	(0.023)	(0.023)
L2.R	-0.012***	-0.012***
	(0.008)	(0.006)
Cons	0.113***	0.111***
	(0.000)	(0.001)
N	54772	54772
adj. R-sq	0.004	0.005

p-values in parentheses, \* p&lt;0.10 \*\* p&lt;0.05

Coefficients multiplied by 100 for brevity

## 6. Conclusion

We study the effect of seasonal movements in short-term interest rates, monetary base, industrial production, consumer price index and foreign exchange rates along with weather and risk preferences on stock market returns. We examine 34 countries between 1973 and 2015 and find that interest rates and their seasonal components exhibit a strong relationship with returns. That association is more pronounced in countries, where seasonal variation in interest rates is smaller. This is further confirmed with difference-in-difference estimation comparing countries that joined the European Monetary Union and those that did not. Interest rates have an increased effect on the stock market in EMU countries, when compared to countries outside the Union, but at a similar latitude. While we find strong evidence for stock market relationship with economic factors, our sample exhibits little indication of the changing risk preferences throughout the year.

## APPENDIX

Table VII. Variable definitions

INT	percentage difference of short-term interest rates
sINT	seasonal component of percentage difference of interest rates
s_adjINT	seasonally adjusted percentage difference in interest rates
MB	monetary base, monthly percentage change
sMB	seasonal component of monetary base
s_adjMB	seasonally adjusted monetary base
IP	industrial production, monthly percentage change
sIP	seasonal component of industrial production
s_adjIP	seasonally adjusted industrial production
CPI	consumer price index, monthly percentage change
sCPI	seasonal component of CPI
s_adjCPI	seasonally adjusted CPI
FX	national currency per USD, monthly percentage change
sFX	seasonal component of FX
s_adjFX	seasonally adjusted FX
SAD	SAD variable from Kamstra et al. (2003) SAD = night_hours-12 in fall or winter, 0 otherwise
Agr. v.a.	agricultural value added as percent of GDP
TEMP	Average daily temperature (C) from 6 am to 4 pm
PRCP	Daily precipitation in millimeters
CLD	Daily cloud cover in percent
Dummy Monday	1 on Monday, 0 o.w.
Dummy Tax	1 7 days before and 1 day after end of fiscal year
Dummy December	December dummy to proxy for increased cash demand around holidays
Recession	1 if recession, 0 o.w. from FRED, IMF and CIA Factbook
Dummy Fall	1 if fall, 0 o.w.
EA_time	1 after countries enter Euro zone, 0 before

EA\_treated 1 for countries in the EA, 0 outside

s\_adj- seasonally adjusted variable; s- seasonal component only

seasonal component calculated as difference between unadjusted and seasonally adjusted variable

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# Influence of social media in the Practice of Journalism in Bangladesh

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## Keywords

Social media, Journalism, Journalists, Bangladesh, Facebook

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## Abstract

*In the rapidly changing global arena, technological advancement and the adaptation of changing patterns of technology the growing trend in all areas, including journalism. The increasing use of social media in journalism due to technological advancement has been remarkably noticeable worldwide, including in Bangladesh in recent years. With the delicate touch of social media, sourcing and disseminating information have been easier. Social media has been considered one of the blessings of journalism to disseminate and share news events and get immediate feedback from the audience. As Facebook is the most popular social media among journalists in Bangladesh, the study took Facebook as the central unit of the research. The research's main objective is to determine how journalists in Bangladesh use Facebook in their regular journalism practices. The study is a qualitative study based on quantitative data.*

*In the regular journalism practice, the study inquiries different uses of Facebook by Journalists in Bangladesh based on survey data. It has been found that to disseminate reports published or broadcasted in different newspapers and TV channels; journalists mainly use the Facebook platform. The study revealed that the reports not published or broadcasted in mainstream media are getting space in social media. The study also discovered that to get immediate feedback from the audience, the journalists in Bangladesh considered Facebook one of the most powerful tools. Moreover, to develop sources and get clues for news, Facebook occasionally assists journalists significantly. Furthermore, a significant finding is that ethical practice is in danger when practicing journalism on Facebook. Based on the above findings, the study concluded that for journalists in Bangladesh, social media would be an effective alternative to sharing news and getting immediate feedback from the audience.*

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## Introduction

Technological changes have taken place worldwide to keep pace with necessity, demand, and development. In every sphere of life, human beings are inspired by technological development and adaptation to changing patterns of technology. With the delicate touch of technology, various professional areas, including journalism, are rapidly developing.

To exercise professional efficiency and effectiveness, various ICT is being used by journalists. Contemporary journalism in Bangladesh inevitably exercises significant changes in producing and developing media content in line with global practice in utilizing technology. A survey conducted worldwide by Statista-The Statistics Portal, in April 2018, on primary social networking sites revealed that people worldwide use Facebook as a preferable networking site. Journalists are using Facebook in several perspectives of journalism practice. According to Bunz 2010, social media is a popular source for journalists and has become an essential part of online news distribution and consumption. According to Kümpel, Karnowski & Keeling, 2015, using social media news sharing has been simplified and facilitated the easy-to-use tools for posting content.

According to Fahad 2014, the nature of journalism has been changed significantly by the development of social media during the last two decades (Fahad, 2014). In Bangladesh, contemporary journalism practitioner experiences significant changes in their working practices. As places for sharing news, various social sites, including Facebook, Twitter, Instagram, LinkedIn, Viber, Imo, etc., have earned a reputation (Rahman, 2016).

The users routinely post details of their daily work and experience. Journalists use Facebook and similar sites to get help finding sources, spreading news stories, and receiving audience feedback. Using these sites, journalists get a tremendous opportunity to promote themselves with their work on the web (Rogers, 2017). From the western perspective, social media is also getting very popular in developing countries like Bangladesh. Journalists of Bangladesh are using social media, especially Facebook, in their daily journalism practices, like sharing news and getting feedback, etc. (Rahman, 2016). However, remarkable research could hardly be found in Bangladesh's perspective about the various uses of social media in journalism by journalists. The present study attempts to learn about journalists' professional exercise in using social media, especially Facebook, in Bangladesh. Facebook helps journalists get news clues from known and unknown sources. Sometimes just because of their journalistic identity on their Facebook profile, people get a tremendous opportunity to promote themselves with their work on the web (Rogers, 2017)

However, the research could hardly be found in Bangladesh regarding the various uses of social media in journalism. The study aims to learn about the professional exercise of journalists in using social media, especially Facebook, in Bangladesh.

### **Objectives of Research**

The study is to reveal the nature and purposes of social media use by the journalists of Bangladesh in journalism. With the primary objective, the study has some specific objectives, which are:

1. To identify the use of social media by journalists of Bangladesh in their journalism practice.
2. To observe how journalists use social media in sharing news and getting feedback.
3. To discover how journalists are using social media in developing and maintaining sources.
4. To find out how far journalists could maintain ethical guidelines on Facebook while using this site for journalism.

### **Statement of the Problem**

Journalists are using social media to exercise their professional activities worldwide. However, different studies in this context have been conducted and observed mixed outcomes. An empirical study by Kitterman (2012) discovered that social media has an overall positive role in regular journalism practices. However, from an ethical point of view, some journalists refuse to use social media in journalism. The study concluded that some journalists are still not interested in using this platform to engage their audiences in the story despite the use of social media in journalism having risen at the beginning of this decade. Another study by Olmstead and Barthel (2015) on the access and sharing of local news by American journalists found that journalists confront some challenges in collecting information through social media and sharing news. However, there is no scientific evidence in Bangladesh regarding the use of social media in Journalism. So, to ascertain its pros and cons, it is essential to figure out the scenario of using social media by the journalists of Bangladesh in journalism.

Fisher (2011) found that both in developing and developed countries, social media is used as a platform for news sources, sharing news, communicating, and getting audience feedback. In western countries, as a way of showcasing their reports, many journalists use social media, including Facebook, Twitter, etc., and achieve tremendous popularity (Fisher, 2011).

According to Ahmed 2015, social media undoubtedly has had some positive uses in journalism, but there are some concerns about their impacts on efficiency and disruption. The researcher concluded that social media had created such a dependency and circumstances that many of them could not perform their jobs without its help (Ahmed, 2015). To engage the audience with a story, some journalists in Bangladesh use social media as a platform for journalism. It is indicated by the perspective of Bangladesh that to perform the work of journalists effectively, the absence of social media can create barriers (Colhoun, 2015). The finding indicates a growing culture of using social media by journalists in journalism. So, it is essential to find out the different use of social media in journalism in Bangladesh. However, empirical studies are hardly found on it in Bangladesh. The current study will minimize some knowledge gaps.

## Literature Review

For professional purposes, most journalists in the world are using social media. A study by Gulyas (2013) found that different variables of Facebook influence journalists' professional practice. The use of Facebook is various practices in journalism by the journalist, including news selection, news presentation, news distribution, etc. (Paulussen 2016). Publishing and promoting different content are the practical uses of social media. The finding of an empirical study indicates that the use of social media is much more by online journalists than that by print media journalists. Moreover, the porn of the use of social media is more in younger journalists (18-27) than in their senior journalist counterparts (46+).

Studying the working practice of local journalists in the UK's east midlands region suggests that social media may accelerate the change in journalism practices. The study examined the latitude and characteristics of social media use in local news by applying the interview method. In France and the USA, the use of social media by journalists is examined by Matthew Powers and Vera-Zambrano (2015). They found that work practices and interactions with peers influence social media usage by journalists. The typical examples of similar routine tasks in social media by journalists in both countries are gathering information, monitoring sources, and developing story ideas. Another study by Matthew Powers and Vera-Zambrano (2015) found that French Journalism motivates news organizations to use social media, while American Journalism incentivizes journalists to orient social media use toward audiences.

The scenario in Bangladesh, however, is a little different. Most journalists use Facebook as social media for regular journalism practice, while most of the people of the country use Facebook as social media (Rahman, 2016). Like Bangladesh and the world's developed countries, the practice of social media in journalism is growing in popularity in developing countries daily. In Bangladesh, people use Facebook as social media, irrespective of all segments and professions.

According to the report "We are Social and Hootsuite, as of 2021, there are around 48.8 million registered Facebook users in Bangladesh who share comments, statuses, pictures, videos, etc. Facebook users in Bangladesh accelerated to 48.8 million in 2021 from 96 thousand in 2006 (BTRC 2021). One new user joins Facebook every 7 seconds in Bangladesh, which is more than the birthrate of Bangladesh (Shams, 2020). The following table shows the.

Table 1: Different social media users in Bangladesh 2020

Name of social media	Percentage of Users (%)
Facebook	90
YouTube	43
Google+	24
Twitter	3
Other	7

Source: BTRC 2020

Regarding the popularity of social media, especially Facebook, it is a massive question whether social media threatens traditional media in Bangladesh. An empirical study by Rahman (2016) found that youth who use Facebook read printed newspapers less than non-Facebook users. It is because Facebook users get all important news in their news feed of Facebook from the mainstream newspaper. The finding indicates that the people of Bangladesh, mainly the young generation, heavily depend on Facebook to satisfy their information needs compared to traditional media.

Another study by Alejandro (2010) entitled 'Journalism in the age of Social Media' applied the method intending to find out the usage of social media in news operations among selected chief editors from different parts of the world. It has been discovered that with speed and immediacy, social media helps journalists best receive the news. Regarding the accuracy of the news, verification of sources, and less control over the information were also identified as some risks of using social media in journalism.

It is a matter of fact that only a few studies have been conducted in Bangladesh about using social media in journalism. Therefore, estimating a concrete and absolute result overlooking many angles is challenging. The present study is an attempt to explore this gap.

### Rationale of the Study

To conduct the current study, several factors have been prompted. 1st the literature review revealed that most of the research covering the issue of social media and journalism practice had been conducted in developed countries, and developing and listed developed countries have a vast lacking in the area. Secondly, research on the growing phenomenon of 3rd world countries like Bangladesh using social media such as Facebook to share news, gather information, and engage with others is challenging. Thirdly, policymakers and stakeholders should take the necessary initiatives to confront the challenges of journalism practice in social media, like sharing and uploading fake news. However, there needs to be more evidence to guide policymakers in making evidence-based policies. Finally, the study will cover the new issues of social sciences in the context of Bangladesh. This pioneering work can help future research for further exploration.

### Research Methodology

In the study, a case-oriented qualitative research strategy has been applied to fulfill the objectives. The case-oriented study consists of 3 criteria: questionnaires, contemporary issue phenomena, and little control over respondents. The nature of the study is indicative. The inductive approach starts with the observations, and at the end of the research, theories or generalizations are formulated as a result of observations. The study is conducted with a case-oriented inductive approach.

The research is based on both primary and secondary sources of data. 20 structural and the same number of semi-structural questionnaires were given to 80 journalists of several ages, sex, and media outlets practicing journalism in Bangladesh. Moreover, face-to-face interviews were also conducted among the respondents. Secondary data was collected through books, published articles, research materials, and internet sources.

Different statistical analyses have been used for quantities analysis and raw data counts to establish frequency and percentage to complement quantities data. Structural and semi-structural questionnaires with open-ended and closed-ended questions helped the research fulfill research objectives.

### Finding and Discussion

#### Journalists' Use of social media

The study attempts to determine the scenario of social media use in journalism in Bangladesh. 97.5% of the respondents are found to be active on social media, while 97.43% use Facebook as a source of social media. Of the journalists using social media, 93.42% ensure that they use Facebook as a social network (Table 1). The study's finding indicates that a significant portion of journalists is active on Facebook for journalism in Bangladesh perspective. The same finding was observed in the study conducted by Bunz (2010) on the western perspective. In the study, Bunz discovers that Twitter and Facebook are significant sources of Social media journalists use in journalism.

**Table 2: Uses of social media by the Journalists in Bangladesh**

Uses of social media	No.	%
Uses of social media	Yes	78
	No	2
	Total	80
Uses of social media	Facebook	76
	Twitter	2
	Linkedine	0
	Other	0
	Total	80
Uses Facebook as Social Network	Yes	76
	No	2
	Total	78
Use Facebook for Journalism	Yes	76
	No	2
	Total	78

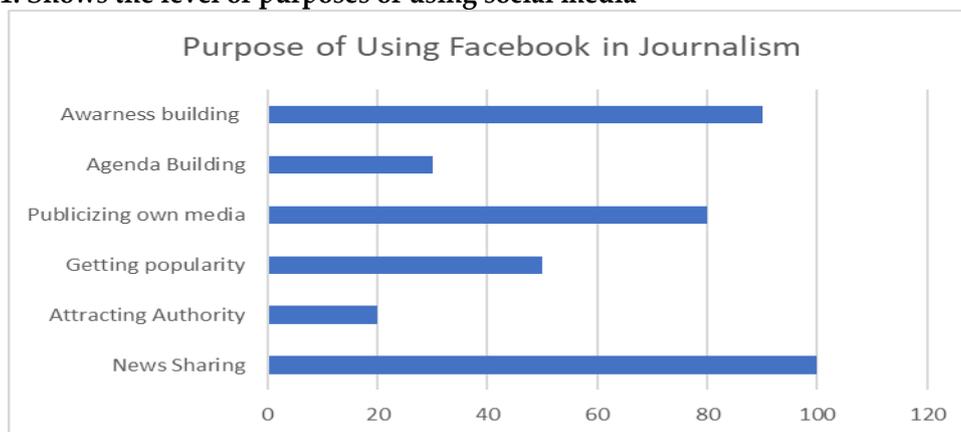
Source: Calculated by the Author 2021

The current study is in the context of Bangladesh's Facebook Uses (95%) through the journalist in the practice of journalism. A similar finding was revealed in the study was also found by a study Apuke (2010) in the context of Facebook Used by Journalists in Jalingo Metropolis.

### The Main Purposes of using Facebook in Journalism

One of the study's primary objectives is to discover how journalists use Facebook in their regular practices. The finding discovers that Facebook is used mainly for six purposes in the practice of journalism, including-a) news sharing, b) attracting Authority, C) gaining popularity, d) publicizing own media, e) agenda building, and f) awareness building

Figure 1: Shows the level of purposes of using social media



Source: Computed by the author 2021

The study reveals that an overwhelming majority of 98% of the respondents use Facebook in journalism to share their news, while almost 90% use the platform to build awareness. Examining 461 peer-review articles, Kumpel (2015) found that most Journalists use Facebook for news-sharing purposes.

### Feedback Over Using Facebook

One of the principal objectives of the study is to determine whether the journalists of Bangladesh consider Facebook a powerful component for getting immediate feedback from audiences. It has been found that 95% of the respondents agreed that they are getting vital feedback both from mainstream and social media, while 85% of respondents denote that they are getting maximum feedback from Facebook.

Table 3: Getting Feedback through Facebook

Getting Feedback from the Audience		No.	%
Getting Feedback from the Audience	Yes	76	95
	No	4	5
	Total	80	100
Maximum Feedback	Mainstream media	68	85
	Social media	12	15
	Total	80	100

Source: Calculated by the Author 2021

### Building and Maintaining Sources through Facebook

The study discovers that to develop sources and get clues for news; occasionally, Facebook assists journalists greatly. A collective study conducted jointly by Cision and George Washington University (2017) found that most journalists use social media as a source of their news. The current study reflects a similar result with the finding that 93% of respondents use Facebook as their news source.

### Ethical Guideline over Using Facebook

One of the study's primary objectives is to discover whether journalists practice ethical guidelines while using Facebook for journalism. It has been discovered that almost 97.5% of the respondents agreed

that they maintain and practice ethical guidelines while using Facebook for journalism. On the contrary, only 2.5% of respondents said they could be more careful about ethical issues while using Facebook for journalism.

Table 4: Practicing ethical guideline in Facebook

Practicing ethical guideline in Facebook	Form/Format	No.	%
	Yes	78	97.5
	No	2	2.5
	Total	80	100
Concern of violating Ethical Guideline in Feedback	Yes	65	81.25
	No	15	18.75
	Total	80	100

Source: Calculated by the Author 2021

More than 80% of the respondents mentioned that while using Facebook for journalism, violating ethical guidelines is a common scenario (Table 5). The use of social media in journalism is a significant concern throughout the world. The same result was found in the study by Dickinson (2011) that journalists are excited to use social media but anxious about ethical concerns.

### Overall Finding of the Study

The study reveals that sharing news, videos, and photos on Facebook is preferable for journalists in Bangladesh the journalism practice. Sharing news to accelerate the audience's awareness and promote particular media using Facebook is their essential motive. Journalists share news on Facebook published in a news portal, in turn, to promote themselves, get feedback, and sometimes interact. Journalists capitalize on different statuses, comments, reactions, inbox messages, and individual and group chats. The audience responds by sharing their thoughts and perception regarding the news.

To develop and maintain sources, Facebook is a crucial and supportive platform, as indicated by the finding. It also facilitates getting clues for news. Most journalists know the ethical dimension of using Facebook while practicing journalism. However, at the same time, they believe that this platform could be dangerous due to the ethical and irresponsible practice of journalism. The study also revealed that social media assists journalists in overcoming the time and space limitations of traditional journalism.

### Conclusion

Social media is an effective platform for practicing journalism in the ever-changing technological arena. Based on the literature review and analysis result, technological advancement assists journalists in promoting journalism in various ways. Facebook, as the popular social media site in Bangladesh, is being used by journalists, turning it to be part and parcel of life. As one of the world's developed countries, Facebook has brought significant changes in the practice of journalism in Bangladesh. However, a lack of ethical practice in using Facebook could be detrimental to the profession and harm society despite opening up a new horizon for journalism. For developing and maintaining sources, collecting information, sensing clues, sharing news having feedback, etc., social media has already become an alternative and practical component for journalists. Moreover, it is a matter of fact that the platform is gradually becoming a forum for interaction and engagement with media, its professionals, and its audience. However, to use Facebook for journalism, practitioners should be more conscious and responsible.

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# Effects of burnout, compensation, supportive college environment, training and development on academic staff performance in Jigawa State College of Education Gumel, Nigeria

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## Keywords

burnout, compensation, organizational justice, Performance, supportive college environment

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## Abstract

*Colleges of Education and other tertiary institutions like universities assume the role of training and producing teachers to teach in junior secondary schools and primary schools in Nigeria. The success or failure of any college of education depends very much on the ability of the institution to train and develop its staff into a productive, competent and skilled work force which is capable of, and willing to work towards the realization of these objectives. Past studies have revealed that employee performance may be affected by factors such as training, burnout, organizational justice, compensation and environmental support. Therefore, the current study examined the Influence of Job-Related Factors on the Performance of Academic Staff in Jigawa State College of Education, Gumel. A total of 159 academic staff participated in the research. A survey research design was used, and data were collected by using instruments adapted from past studies. The study employed partial least square structural equation modeling (PLS-SEM) using SPSS software. The results of the structural model showed that burnout, organizational justice, supportive college environment have significant negative effect on academic staff performance and Compensation and training and development have significant positive effect on academic staff performance in JSCOE Gumel. The study therefore recommended social intervention, training and development programs and fairness and justice should be exercised in organizational dealings.*

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## Introduction

For any society to achieve meaningful growth and development, the socio-cultural, economic and political system must be improved. That is why most societies place much emphasis on the development of the individual as a means to national development. Education stems out to be one of the sure means of developing individual's potentials. In 1981, National Policy on Education postulated that education is the greatest investment that the nation can make for the quick development of its economic, political, sociological and human resources. Among the various educational institutions through which the nation hopes to achieve its vision is the Colleges of Education. The Nigerian colleges of education are institutions saddled with the responsibilities of producing teachers with Nigeria Certificate of Education (N.C.E) which is the minimum entry qualification into the teaching profession in the country. These categories of teachers are meant to teach pupils from Basic 1 to 9, that is, 6 years in primary school and 3 years in junior secondary school.

An important resource to any higher institution of learning is its academic staff as they play regular role that cannot be underestimated. Nowadays, the desire for a high level of academic performance puts a lot of pressure on academic staff, schools and in general the education system itself. In fact, it appears as if the whole education revolves round the performance of teaching staff, though various other outcomes are also expected from the system. Academic staff job performance can be regarded as an index of lecturer effectiveness, which refers to relationship between the characteristics of teaching and its effect on educational outcome in classroom teaching (Alabi, Murtala, & Lawal, 2012). The academic staff performance may be reflected by the student academic performance, the number of academic publications and various academic conferences attended. To Platt (2010), the performance of employees is a

combination result of effort, ability, and perception of tasks which is imperative for organizational outcomes and success.

However, a number of factors may influence employees performance and these includes burnout (a, Durrah & Harris, 2015 & Pourkiani, Farahmand & Pour, 2014), organizational justice (Costa & Costa, 2014; Manouchehri, Branch, & Katoul, 2014), compensation (Baba, 2015; Osibanjo, Adeniji, & Olubusayo, 2014; Ramzan, Zubair, Ali, & Arslan, 2014), training and development (Alice, 2014; Al-mzary, Mohammad, Mohammed, & Eid, 2015; Hafeez & Akbar, 2015; Khan, Osama, Haseeb, Waseem, Ayaz & Ijaz, 2016) and organization environmental support.

### **Statement of the Problem**

Colleges of Education and other tertiary institutions like universities assume the role of training and producing teachers to teach in junior secondary schools and primary schools in Nigeria. It is in the realization of the importance of teacher education in contributing to quality of academic performance that successive administrations in Nigeria at both State and National levels have been allocating a significant part of their annual budgets to education. Like any other organizations, the Colleges of Education are faced with the problems of encouraging employees to work productively and qualitatively towards the achievements of their set objectives. The success or failure of any college of education depends very much on the ability of the institution to train and develop its staff into a productive, competent and skilled work force which is capable of, and willing to work towards the realization of these objectives. However, Hameed and Waheed (2011) asserted that firm's crucial component is its employee and their success and failure depends on performance of employee. Impliedly, the success or failure of any academic institution is dependent on the academic staff of such institution.

Past studies have revealed that employee performance may be affected by factors such as training and development (Al-mzary et al., 2015; Alice, 2014; Elnaga & Imran, 2013; A. A. Khan et al., 2016; R. A. G. Khan, Khan, & Khan, 2011), burnout (Khdour et al., 2015; Pourkiani et al., 2014), organizational justice (Costa & Costa, 2014; Manouchehri et al., 2014), compensation (Baba, 2015; Osibanjo et al., 2014) and environmental support. However, To the knowledge of the researcher, none of the studies reviewed have empirically examined the combined effect of these factors, under the current context, on the performance of academic staff of colleges of education.

It is within this context of literature that the present study was initiated.

However, creating a work environment which promotes wellbeing of employees and increase individual performance is viewed as a strategy for enhancing organizational efficiency and productivity. Employees normally have expectation and will demand a workplace environment that facilitates them to perform their work optimally. The type of workplace environment in which employees operate determines whether or not such organizations will prosper (Chandrasekhar, 2011)

### **Research Objectives**

The specific objectives are:-

1. To determine the effect of burnout on academic staff performance in JSCOE Gumel.
2. To examine the impact of compensation on academic staff performance in JSCOE Gumel.
3. To determine the effect of organizational justice on academic staff performance in JSCOE Gumel.
4. To examine the effect of college environmental support on the academic staff performance in JSCOE Gumel.
5. To determine the effect of training and development on academic staff performance in JSCOE Gumel.

### **Research Questions**

1. Does burnout affect academic staff performance in JSCOE?
2. Does compensation affect academic staff performance in JSCOE Gumel?
3. Does Organisational justice affect academic staff performance in JSCOE Gumel?
4. Does college environmental support affect the academic staff performance in JSCOE Gumel?
5. Does training and development affect academic staff performance in JSCOE Gumel?

### Research Hypothesis

**Ho<sub>1</sub>:** Burnout has a significant negative effect on the academic staff performance in JSCOEGumel

**Ho<sub>2</sub>:** Compensation has a significant effect on the academic staff performance in JSCOEGumel.

**Ho<sub>3</sub>:** Organizational justice has a significant effect on academic staff performance in JSCOEGumel.

**Ho<sub>4</sub>:** College environmental support has a significant effect on academic staff performance in JSCOEGumel.

**Ho<sub>5</sub>:** Training and development has a significant effect on academic staff performance in JSCOEGumel

### Concept of Job Burnout

Job burnout is a far-reaching and general experience that is resulted from unique interaction of the character of the person with the environment (Swider & Zimmerman, 2010) and its result is a loss of motivation, enthusiasm, energy and a decrease in live performance (Freudenn, 1975). Conceptually, it is a state of physical, emotional and mental exhaustion that arises from consecutive emotional stress and will be more severe fighting with others for long periods (Corey, Corey & Callanan, 1988). Porter and Steers (1973) noted that job burnout reduces individual adaptation to stressors and it is a condition consisting of emotional and physical exhaustion, which causes negative self-concept in a person, negative feelings and mind set towards the job and lack of communication with clients while on duty. It is a term used to describe those who suffer the stress of being out of tolerance in employment opportunities that they have no longer effective operation and fertility (Pourkiani, Farahmand & Pour, 2014). In this situation it is possible that people become pessimists and if they cannot deal with the source of stress, they may mainly just do gestures (Swider, Zimmerman, 2010). It should be noted that job burnout is not just exhaustion after intense pressure from work but it can spread his overall style of life and his waking hours (Hershen, David & Powell, 1995).

### Dimensions of employee burnout

Maslach and Jackson (1981) identified three basic dimensions of job burnout to include emotional exhaustion, depersonalization and personal accomplishment.

#### Emotional Exhaustion (EE)

Emotional Exhaustion (EE) occurs when there is an awesome demand on an individual's time and energy. EE is known as a major dimension of burnout (Gaines & Jermier, 1983). It is a state caused by psychological and emotional demands made on people. EE is conceptualized as the first stage of burnout (Maslach & Jackson, 1981). Maslach and Jackson (1986) identified emotional exhaustion as the most critical aspect among the dimensions of burnout. Employees who come across emotional exhaustion feels overextended and overworked, where one dreads coming to work and faces lack of energy to face another day at the job (Maslach & Leiter, 1997). In this circumstance, frustration and despondency takes over as the demand of the job continues to outperform the employability.

Westman and Eden (1997) espoused that EE is one of the factors that encourage employees to be more likely to withdraw from an organization. As a support to this view, meta-analytic findings and reviews reveal that emotional exhaustion is consistently positively related to intention to attrition and actual attrition (Swider & Zimmerman, 2010).

### Depersonalization

Depersonalization (DP) emerges as an avenue or medium of defending oneself once one experience emotional exhaustion. Withdrawing from job, no concern towards clients or programs or jobs and becoming cynical with management and other staffs are characteristics of employees experiencing DP (Maslach & Jackson, 1981). At this point, the employee exhibits harmful behaviours towards clients, employees and management. Campbell et al. (2013) states that individuals use withdrawal-based coping measure as they face resource loss and subsequent burnout which is the one-way individual use to preserve the remaining resources such as commitment to organization also known as cynicism. Acting as a defensive mechanism, DP arises when the shield of detachment is truly thick that no feelings and

emotions are able to penetrate through. When detachment increases, the attitude of cold indifference to others' needs and a callous disregard for their feelings occur. Cherniss (1980)

### **Personal Accomplishment**

Personal accomplishment (PA) is reduced as EE and DP takes place, where employees will experience reduction in the sense of personal achievement which includes evaluating oneself unhelpfully to a point where he or she doubts the contribution and capabilities of their work (Maslach & Jackson, 1981). There are many contributors towards reduced PA. For example, when there is a lack of employee involvement in the decision-making process, an employee will experience less valued and not being a part of the team. Therefore, individual with lack of PA would be experiencing low attainment value, intrinsic value, utility value and cost.

### **Concept of Compensation**

Ali (2009) observed that, for individuals, compensation is not only the return of benefits, but it also reflects on individuals' efforts or achievements. Khan (2011) further noted that Human Resources are the major drivers of the prosperity and success of any organization and unless the organization offers salary, rewards and due benefits according to its employees needs and wants it will not be able to achieve the highest level of efficiency and competency of its employees.

. An efficient compensation system can inspire employees to work harder, thus increasing productivity (Lin, 2000), and enhancing job performance.

However, Hu (1993) espoused that compensation has two meanings for managers: first, it is the main operational expenses of enterprises; second, it influences employees' work behavior and attitude. In order to provide a return to employee, Wang (1998) suggested that organizations should offer direct and indirect compensation to employees, including basic compensation, subsidies, reward and welfare. Huang (1997) divided compensation into a base level of compensation, subsidies and rewards. Basic compensation includes salary and benefits. Subsidies include payments for rental housing, transportation, benefits to relatives, compensation for special projects, overtime, delayed food supplies and danger pay allowances. Ponnu and Chuah(2010) identified rewards to include a performance reward, job reward, year-end reward, attendance reward, proposal reward and merit reward.

### **Concept of Environmental support**

(McGuire, 2009). Kohun (2002) espoused that workplace environment is the sum of the interrelationships that exists within the employees and the environment in which they work (Kohun, 2002). Altman (2000) is of the view that one aspect of the competitive challenges faced by organization lies in the management and integration of physical and psychosocial environments. By integrating a balanced workplace environment, the organization is optimizing, profitability and improving the company's popularity as a workplace; projecting a modern corporate entity, which in turn can help you attract highly qualified employees.

Architectural design influences the way people behave, with designers creating conditions that can hinder, discourage, guide, support or enhance users' behaviour (Gutnick, 2007)

Heath (2006) explained further the goal of all business organization is to increase their performance, thus maximizing profits.

The benefits of creating and maintaining a positive working environment are huge. Greater productivity, happier people, employee stability, business advantage, higher profits, greater security, and better health (Shrestha, 2007)..

The modern physical environment is distinguished by technology, computers, machines, general furniture and furnishings which continually affect the brain and health of employees (Stoessel, 2001).

### **Concept of Organizational Justice**

Organization who desires to have its objectives fully achieved will need clear mission, optimal strategies, organizational structures and efficient job design, competent and committed manpower (Muharram-Zadeh, 2012).

Organizational justice has the potential to create enormous benefits for organizations and employees, the benefits include more trust and commitment (Cropanzano & Rupp, 2008).

Organizational justice therefore describes the individual's perception of fairness in organizations, his behavioral reaction to such perceptions and to show how these perceptions affect organizational outcomes such as organizational commitment and job satisfaction (Noruzy, Shatery, Rezazadeh, & Hatami-Shirkouhi, 2011). Injustice decreases job performance as well as decreasing the quality of work and the degree of cooperation among workers (Fatimah, Amiraa & Halim, 2011).

### **Types of Organizational Justice**

Researchers of Organizational behavior identified four types of organizational justice: distributive, procedural, interactional, and informational justice (Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O., & Ng, K. Y., 2001; Colquitt, Greenberg, & Zapata-Phelan, 2005).

#### **Distributive Justice**

To Greenberg and Baron (2008), distributive justice is a form of organizational justice that focuses on people's beliefs that they have been allotted with fair amounts of valued work-related outcomes for instance pay, recognition etc. Similarly, Yayus (2010) sees distributive justice as a perception of justice that encompasses the perceptions of the employees regarding fair distribution of resources among the members of the organization. Employees are likely to compare the fairness of their outcomes with those of similar employees based on their level of inputs within the organization to determine their perceptions of fairness (Colquitt, Greenberg & Zapata-Phelan, 2005). An employee will feel that distributive justice exists if resources are distributed equitably across employees within his or her organization relative to their inputs (Mishra, Mishra, & Lee Grubb, 2015).

Greenberg and Baron (2008) identified three rules that could lead to distributive justice if they are applied appropriately and these according to them includes equality, where each person is given the same, equity, where each person is given in accordance with their contributions, and need where each person is given in accordance with what they require most urgently

#### **Procedural Justice**

The term procedural justice was firstly used by Thibaut and Walker in 1975. According to them, it refers to the fairness of policies, procedures and procedural methods used for the determination and measurement of the factors such as payments, working conditions, promotions, financial opportunities and performance evaluation and other benefits. (Jahangir, Akbar & Begum, 2006). Asserted that procedural justice means the perceived justice of the tools, processes and methods used in the identification of gains. Employees are not only concerned with what the decisions they are making regarding their organizational justice but also, they consider the processes which determine these decisions. Mirmohamdi and Marefat (2014) To Rezayian (2011). When people are dealing with these procedures they make judgment on the fairness of these procedures.

Employees are not only interested in fair outcomes but also interested in fair process for the determination of their outcomes (Aslam & Sadagat, 2011).

Greenberg and Colquitt (2005) gave criteria for procedural justice to include important factors such as voice in making of decisions, consistency when applying rules, accuracy in use of information, opportunity to be heard, and safeguards against bias. In case of procedural injustice people do not only consider their outcomes as unfair but also reject the entire system if they consider the outcomes to be unfair (Greenberg & Cropanzano, 2001)

#### **Interpersonal Justice**

Introduced by Bies and Moag (1986), interpersonal or interactional justice is the quality of interpersonal relationships that would make employees feel to be treated fairly. It also refers to executives being honest to employees, valuing, respecting and informing them during the management processes. In other words, interpersonal justice is the perceived justice of how intra-organizational decisions have been or will be informed to employees (Barling & Phillips, 1993). Interpersonal justice is a compliment of

procedural justice (Aydin & Kepenekci, 2008). Interpersonal justice focuses on the aspects of interpersonal and group communication (Mirmohamdi&Marefat, 2014).

### **Informational Justice**

Green berg and Baron (2008) are of the view that Informational justice refers to people's perceptions of the fairness of the information or data gathered and used as the basis for making a decision. Studies have shown that there is higher level of justice in perceptions of employees when people explain outcomes with high informational justice(detail), and when outcomes were explained to them in a manner that showed a message of dignity and respect to them (high interpersonal justice). Where both informational and interpersonal justice were combined, then the results were additive, and together their results will be overblown (Colquitt, 2001).Informational justice plays a vital role in the success of an organization because people perceive that organizational decisions are based on reasonable information. To Greenberg and Baron (2008), Informational justice consists of factors that enhance individual perceptions of efficacy of explanations provided by organizational agents. Srivasta (2015) identified these factors to include perception of organizational agents' truthfulness and justification.

### **Concept of Training and development**

Staff training and development as espoused by Cumming (1980), means the provision of facilities and opportunities for people to acquire the skills and knowledge needed to perform the jobs for which they are employed, and to develop their own personal potentials to meet the present and future needs of organizations. Training and development is a technique used to transfer to the employee's relevant skills, knowledge and competence to improve employee's performance on current jobs and future assignment (Katou&Budhwar, 2006).

### **Importance of Training and Development**

Employees' training and development is a tactical determination to aid learning of the job related knowledge, skills, ability and behavior that are crucial for efficient performance capable of enhancing organizational effectiveness (Noe, 2000). Training is important and an imperative tool for the organization to revamp the performance of all the personnel for organizational growth and success. Training bridges the gap between the current performance and the standard desired performance. Training is requisite to enhancing workers capability, reasoning faculty and competence which will improve organizational performance (Bowen &Ostroff, 2004) and as well help in gaining competitive edge. Training and development increases employees' efficiencies, novelty, invention, capacity to accept new technologies and techniques (McNamara, 2008). It is important to note that organizations must be able to identify the needs for training and development and select techniques suitable for these needs, plan how to implement them and thereafter evaluate outcome (McCourt & Derek, 2003). In line with this, it is clear that training programs not only develops employees but also help an organization to make best use of their human resources in favour of gaining competitive advantage.

Elnaga and Imran(2013) are of the view that employees who learn as a result of training program show a greater level of job satisfaction along with superior performance

### **Theoretical Framework**

However, the current study adopted the social learning theory as an underpinning theory for the study

### **Social Learning Theory (SLT)**

The theory explains that learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement. In addition to the observation of behavior, learning also occurs through the observation of rewards and punishments, a process known as vicarious reinforcement. In the theory, employees acquire new skills and knowledge by observing other members of staff whom they have self-assurance in and as well believe to be credible and more knowledgeable (Bratton, 2007).

The theory holds that training and learning is influenced by person's self-efficacy and his ability to successfully learn new skills which can be affected by encouragement, oral persuasion, logical confirmation, observation of others (Kendra, 2008). Reinforcement theory believed that training is a strategic tool to make job interesting to the workers and as the avenue for the employees to improve themselves for optimal performance which can culminate to promoting employees for outstanding performance, innovation, creativity as a result of training attended. The resource-based view (RBV) of the firm advocated that an organization can gain competitive advantage by attracting and retaining competent human resources and as well identify relevant training for them that will keep improving their capacity for optimal performance (Ahmad, Jehanzeb, Alkelabi, 2013). By implications, the effectiveness of training and learning depends on the pattern of the job related knowledge, skills, capability, competencies and behavior that are important for greater performance which invariably be capable of influencing organizational success.

## **Research Methodology**

### **Research Design**

The present study employed quantitative research approach to examine the effect of burnout, compensation, environmental support, organizational justice and training and development on the performance of academic staff of JSCOE Gumel. This is because the aim of this study is to test hypothesis and examine the effect of the predictor variables on the outcome variable.

Thus, the present study employed survey method to collect data using self-administered questionnaire.

### **Population**

The population of this study comprised of all the academic staff of Jigawa State College of Education Gumel totaling both male and female/senior and junior staff comprising of 272. This was obtained from the personnel of the open registry department of the institution as at 2020

### **Sample Size**

The study, using Krejcie and Morgan (1970), sample size table at 5% confident interval, arrived at 159 employees as sample size. Using the following parameters, the sample size result is as shown below.

Confidence level = 95%

Confident interval = 5

Population = 272 employees

Sample size = 159

For the purpose of increased representation, 30% of the sample size as recommended by Israel (2013) was added bringing the total to 228 ( $159 + 30\% = 159 \times 1.3 = 228$ ). This takes care of other unavoidable errors such as incorrect filling and failure of some respondents to return questionnaire. The questionnaires were distributed to the participating employees with the aid of research assistants.

### **Sampling Procedure**

In selecting study participants, staff were randomly sampled for responses to the questionnaires. The structured questionnaires were given to the various heads of each department for onward distribution.

### **Sources of Data**

The current study utilized data from primary source through the administration of questionnaires only.

### **Method of Data Collection**

The researcher employed structured questionnaire. Questionnaire is simple and most widely used in survey research as noted by Babbie and Mouton (2001). The questionnaire is divided into seven sections and all were in a close ended form. Section one addresses questions on individual employees demographic data, section two, three, four, five, six and seven address questions on employee performance, burnout, compensation, environmental support, organizational justice and training and development respectively. The questionnaires were administered by the researcher through the heads of departments in the college.

The researcher has on this basis used items suitable in measuring the various constructs of this study from previous studies.

### **Measurement and Instruments**

The instrument is a structured questionnaire measured in 5 point likert scale ranges from 1= strongly disagree to 5= strongly agree. A Five-point Likert-type scale was used to increase response rate and response quality.

### **Findings /results**

Burnout was discovered to have significant negative effect on academic staff performance. This implies that as the level of burnout increases, academic staff performances reduce. This finding is consistent with the findings of Jankome and Ritacco (2013), Khmour, Durrah and Harris (2015) and Pourkiani, Farahmand and Pour(2014). Staff who perceived their jobs to be exhaustive drains their productivity. This explained the positive relationship found in this study.

A significant positive effect of compensation on academic staff performance was another finding of this study. This means that the more staff becomes satisfactory with their compensation the more they perform their assigned duties efficiently. Thus as the level of compensation satisfaction increases, staff job performance rises. This affirmed the results of previous studies (Baba, 2015; Osibanjo, Adeniji, & Olubusayo, 2014; Ramzan, Zubair, Ali, & Arslan, 2014). Compensation motivates staff to put more effort in the performance of their jobs. The more they become satisfied with their compensation the more they become committed to their work. This explained the result obtained from this study.

A significant negative effect of organizational justice on academic staff performance was another finding of this study. This was not as expected in the research. Perhaps there may be some variables influencing this result. This means that the more staff perceive the organization to be just in their dealing and allocation of rewards and punishment the less they perform their assigned duties efficiently. This result contradicts the results of previous studies (Costa & Costa, 2014; Manouchehri et al., 2014).

The study also revealed a significant negative effect of supportive environment on academic staff performance. This also contradicts the results of past study. It was expected that SCE will boost academic staff performance, there could be other influencing factor reducing the performance of academic staff.

Finally, a significant positive effect of training and development on academic staff performance was discovered. This means that the more staff have access to training and development programs the more they perform their assigned duties efficiently. Thus, as the level of training increases, job performance rises. This affirmed the results of previous studies (Alice, 2014; Al-mzary, Mohammad, Mohammed, & Eid, 2015; Hafeez & Akbar, 2015; Khan, Osama, Haseeb, Waseem, Ayaz & Ijaz, 2016). Training provides opportunity for staff to update their knowledge the more staff have access to training and development programs, the more they perform their assigned duties efficiently. Thus, as the level of training increases, job performance rises. This affirmed the results of previous studies (Alice, 2014; Al-mzary, Mohammad, Mohammed, & Eid, 2015; Hafeez & Akbar, 2015; Khan, Osama, Haseeb, Waseem, Ayaz & Ijaz, 2016). Training provides opportunity for staff to update their knowledge and meet up with the changing working environment. Thus, staff who are given training improve the output. This explained the result obtained from this study.

### **Discussions/Conclusions**

Education stems out to be one of the means of developing individual's potential. It helps to eradicate illiteracy and may provide the common man an access not only to basic education but also to higher and technical education. To attain this vital goal of education, quality staff are needed to provide their professional services in maintaining standard expected by the society. Thus, it becomes imperative to conduct a study examining the influence of academic staff performance predictors as identified in this work and recommend possible solution to the problem.

Five hypotheses were formulated for testing and using partial least square structural equation modelling through SPSS software, the study tested the hypotheses using the data collected from a sample of 159 academic staff drawn from JSCOE Gumel. The result showed that while burnout, organizational justice and supportive college environment were having significant negative effect on academic staff

performance, compensation and training and development were having significant positive effect on academic staff performance.

Based on the findings, the study concludes that burnout, compensation, organizational justice, supportive college environment and training and development have significant effect on academic staff performance in Jigawa State College of Education Gumel, Jigawa State.

### **Implication of the Study**

The study examined the effect of self-efficacy and training on teachers' performance and the role of organizational commitment and has come up with results. There is no doubt that these results may have great implications to both body of knowledge and to the management and administrators.

### **Theoretical Implications**

The results of the current study have important practical implications. First, clarifying the employee's role and reducing conflicting demands at work are both possible avenues that managers may be able to perform for minimizing burnout. When addressing the secondary symptoms of burnout, employers would be well advised to attempt to increase resources in addition to the steps taken to combat demands. Secondly, the important role played by supportiveness of college climate in determining a firm's market orientation is identified and supported empirically, which in turn explains significant variance in academic staff performance. Given the size and growing importance of the college of education to the society, this provides important insights for both researchers and managers. However, supportiveness of organizational climate is not a factor that previously has been identified explicitly as an important driver of academic staff performance in Nigeria.

### **Managerial Implications**

Several practical implications emerge from the results of the study. First, this study provides further evidence of the important role that compensation and training and development may play in positively impacting the performance and work attitudes of employees and potentially may contribute to the institutional competitive advantage. This study would suggest that it may be important to recognize that the level of an employee supportive organizational climate can contribute to performance.

Environmental demands appear to play a larger role in emotional exhaustion than resources, particularly in professions with high requirements for emotional labor. In the current era of downsizing it may be unrealistic to minimize the workload of employees. However, the college management may want to be cognizant of the predictors of burnout and identify employees early in the process so as to minimize the burnout experienced.

### **Suggestions for Further Study**

This study could be replicated by covering a larger geographical area, so that generalizations can be made. Other moderators and mediators can be integrated in the model for further theoretical contributions. Further studies should consider the role of training methods as a possible moderator in the model. The study could be replicated in other sectors of the economy other than the education. A comparative study can be carried out on other colleges of education to confirm the result of the study. Finally, a longitudinal study can be conducted

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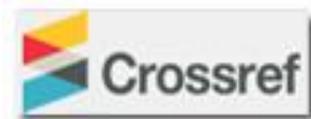
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# **THE BUSINESS & MANAGEMENT REVIEW**

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