
Trust and other factors influencing the take-up of internet banking in the Kingdom of Bahrain

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Abstract

An in-depth investigation of Internet banking in Bahrain examined the factors affecting the adoption of this service through surveys and case studies involving both traditional and Islamic banking customers. It was found, in keeping with international literature, that there were five main factors affecting the uptake of Internet banking: lack of knowledge/awareness, trust, privacy, user-friendliness and security, and it was concerns with the latter that were identified as the major barrier in this study. As well as the five factors identified in the international research in this field, an additional aspect that was thought to influence the choice of banking services in Bahrain was also identified: This is related to what is locally referred to as "wasta," the social networks and personal connections important in the Arab world in conducting business.

Introduction

The motivation for the research was the low take up of Internet banking in Bahrain. Privileged access to banking records allowed an initial study which showed the proportion of people in Bahrain who had an Internet connection and the proportion of people who used the Internet for banking services. It was found that Internet use and availability was higher than other gulf states, however Internet banking use was lower (Janahi, Cullen, & Mellor, 2005).

In common with other areas of the world it was found that trust was an issue. Also it was found that the demographics of Internet banking users was similar to other countries; being the educated and technically proficient younger middle classes. A significant amount of work was spent looking at areas associated with trust and the potential for biometrics to be able to enhance security, ease access and increase trust. Biometrics looked promising; our surveys suggested that they would lead to greater trust and hence greater take-up amongst sectors with a current low take-up of Internet banking.

A prototype was built and tested that identified ways of allowing the use of low cost fingerprint sensors at home and the addition of fingerprint recognition to ATM systems. The

trials of these suggested high acceptability by existing users as well as new users (Janahi, Cullen & Mellor, 2006).

However, another factor was identified which influenced decision making in general, that was the customer's social network or connections. This is called 'wasta' and may refer to nepotism or undue influence but also describes a cultural influence operating in all societies to a greater or lesser extent (Cunningham, R. B. and Sarayrah Y. K, 1993). Amongst some Middle Eastern groups this influence can be significant. It may explain the differences between take up of Internet banking from one region to another.

This social influence may explain the barriers and general directions taken by certain groups but the surveys and exploration within one social grouping have shown that technology can reduce the barrier.

The Bahrain banking Scene

The banking industry officially started in Bahrain in 1923, when the Eastern Bank (now Standard Chartered Bank) opened its first branch, followed by a branch of the British Bank of the Middle East (now, HSBC) in 1945. The first locally incorporated bank, National Bank of Bahrain was incorporated in 1957.

The first locally incorporated bank, National Bank of Bahrain was incorporated in 1957. As of November 30, 2007, the industry was composed of 412 financial institutions (CBB - Banking Fact Sheet , 2011, p. 1). The rapid growth of the banking industry has perhaps been a factor working against the adoption of new banking technologies, as the banking industry in Bahrain tends to depend on the strength of business relationships and networks, rather than on an assessment of what the most efficient and effective service.

Bahrain's banking system consists of both conventional and Islamic banks. According to CBB - Banking , (2011, p. 1) in banking section page, conventional banking is still the largest component of the financial system, accounting for over 85% of total financial assets. The conventional segment includes 19 retail banks, 69 wholesale banks, 2 specialized banks as well as 36 representative offices of overseas banks. As at December 2006, banking sector assets stood at over US\$180 billion, more than twelve times the annual gross domestic product (GDP) (CBB, 2011, p. 1).

Bahrain's banking system has experienced annual average growth rates of 18 per cent over the past period 2006-2008, partly fuelled by growth in liquidity from oil revenues in the region, which has been the platform for banks providing capital for both financing and re-investment within all sectors of the Bahrain economy, and to specific projects in other countries. According to EDB, (2012, p. 1) in financial services page that the banking sector has further benefited from annual growth of around 20% in funds available from high net worth individuals in the region

According to CBB - Banking , (2011, p. 1) industry growth has been supported by an open market economy; stable and prudent macro-economic and fiscal policies; a credible

regulatory framework in line with international standards and a notably strong and well qualified local workforce. All these factors have combined to cement Bahrain's position as a regional banking hub, successfully attracting numerous foreign banking organizations to establish a physical presence in the country (CBB - Banking, 2011, p. 1).

Since it became an independent State in 1971, Bahrain has witnessed spectacular economic growth and has been transformed from an essentially agricultural base, where the main products were pearls and dates, to a modern industrial, business and service centre (EDB, 2012). This transformation is evidenced by some selected indicators of development, such as the high literacy rate, mobile phone ownership and internet access, as shown in Table 1.

The Bahrain Economic Development Board (EDB) is dynamic public agency with overall responsibility for formulating and overseeing the economic development strategy of Bahrain. Bahrain's strategic objectives for change and growth are outlined in Economic Vision 2030, which includes a comprehensive reform programme that seeks to grow and diversify the economy and address the skill gap in the labour market through radical changes to the education system. Business and professional services are built on the strength of client relationship. Bahrain is unique the GCC and wider Arab World in providing a neutral platform from which to conduct business (Economic Development Board, 2011, p. 1).

As part of this strategic vision, Bahrain has sought to establish itself as a regional banking hub. Based on the CBB's 2011 report about Bahrain's financial sector, it has been successful in attracting numerous foreign banking organizations to establish a physical presence in the country because of its central geographic location and its strong legislative platform, which offered a level of confidence to investors (CBB - Banking, 2011).

A key objective of the Central Bank of Bahrain (CBB) is to ensure the continued soundness and stability of financial institutions and markets. In Bahrain the banking sector growth, backed by the good fortunes of the oil industry and the corresponding increases in liquidity have been accompanied by legislation and penalties against money laundering ('AML') and combating the financing of terrorism ('CFT') as key priorities.

On 15 August 2006 the Financial Trust Law was issued by Royal Decree no. (23) Of 2006: It contains comprehensive regulations governing the establishment and management of financial trusts. The introduction of this regulatory platform in Bahrain was one of the first of its kind in the Middle East.

Bahrain is also at the forefront of developing legislation to deter IT-related crimes and currently a bill that proposes changes to the law is before parliament which, if approved, will see sentences up to a maximum of seven years imprisonment and fines of up to BD300,000 (US\$795,755.97) for abusing public facilities, hindering services and endangering lives. Similarly a maximum of 10 years imprisonment is the penalty for forging or destroying government data. According to Gulf Daily News, (2009, p. 2) these tough penalties also apply to anyone who seizes money fraudulently or contributes to crimes through instigation, agreement or assistance.

Biometrics: A Solution to Consumers' Concerns?

An investigation into the biometric applications currently available was undertaken with an analysis of their strengths, limitations and possible applicability to Internet banking.

Table 1: Comparison of Biometrics Technologies

Biometrics	Universality	Uniqueness	Permanence	Collectability	Performance	Acceptability	Circumvention
Face	High	Low	Medium	High	Low	High	Low
Fingerprint	Medium	High	High	Medium	High	Medium	High
Hand Geometry	Medium	Medium	Medium	High	Medium	Medium	Medium
Keystrokes	Low	Low	Low	Medium	Low	Medium	Medium
Hand Vein	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Iris	High	High	High	Medium	High	Low	High
Retinal	High	High	Medium	Low	High	Low	High
Signature	Low	Low	Low	High	Low	High	Low
Voice Print	Medium	Low	Low	Medium	Low	High	Low
Facial	High	High	Low	High	Medium	High	High
Thermograms							
Odour	High	High	High	Low	Low	Medium	Low
DNA	High	High	High	Low	High	Low	Low
Gait	Medium	Low	Low	High	Low	High	Medium
Ear	Medium	Medium	High	Medium	Medium	High	Medium

Source: (Jain, Bolle, & Pankanti, 2006)

Each has its strengths and limitations and accordingly each biometric is suited to a particular identification application. Below is a brief summary of the main biometric technology types, which are summarised in Table 1 by Jain *et al.*, (2006, p. 16). Table 2 illustrates some of the identified benefits and limitations of utilising biometrics (source: Wayman, D., & Maio, 2005, p. v).

Biometric systems may be classified as physiological- or behavioural-based. However, there are also techniques that rely on both physiological and behavioural characteristics. The physiological-based techniques, which measure the biological characteristics of a person, include analysing the following patterns among others: fingerprints, iris and retina patterns, facial image, and outline of hand and ear shape. They also include body odour detection, speech and voice verification, DNA pattern analysis and sweat pore analysis. Behavioural-based techniques include hand-written signature verification, keystroke analysis, voice recognition, typing rhythm and gait analysis (Zorkadis & Donos, 2004).

Biometric fingerprint identification is currently in use at Bahrain International airport, with biometrics fingerprint image as well as other user details such as driving license, e-gate and personal details such as occupation, address, and blood type. However, people are not fully utilizing this technology. It may be the cultural aspects or other factors such as privacy, trust and

security. The biometric fingerprint is more user friendly and acceptable than other technologies (Table 1).

Internet Banking Uptake: An Ecological Framework

Previous studies suggest that the uptake of Internet banking was related to customer characteristics, such as age, gender, their academic and social background and their perceived benefits, as well as to bank related factors of young and developed countries.

Customer characteristic is one component of many factors that have direct and indirect influence on their behaviour. These factors have been developed into a framework that illustrates the relationship of the various influences on customers in decision making. Figure 1 illustrates the layers from the outer layers or high level factors through to the centre of customer characteristics such as age, gender, education level and customer's technology awareness.

Factors such as socio-cultural system, political issues, education system, labour market, historical context religion and economic environment have an indirect impact on behaviour. Another fact that may have a direct influence on a customer's decision is entity reputation, policies in place, a clear legislation, financial system and banking system strength. This layer has a strong influence on a customer's decision. Factors that were investigated by the researchers previous to this part of the study, and by other researchers as presented elsewhere, are shown on the same level of influence. These issues are customer trust, privacy, security, lack of knowledge/awareness, and customers support. A new factor also considered to have an equivalent level of influence is the customer's relationships with people they respect that is called *wasta*. Then it comes to the closer layer which is workplace colleagues, family, friends, school and neighbourhood considered as having a direct influence on a customer's decision in business selection.

Gender differences that might need to be considered by banks in formulating strategies, to increase trust in Internet banking as females were found to be more conservative about risk taking: they were less trusting and more concerned about security issues towards Internet banking uptake, especially in Islamic banks. In fact in Estonia Internet banking is only a few years younger compared to the Internet services in general, as they had not had enough time to develop physical branch banking habits resistant to later change. Banks in Estonia were still in the process of setting up information technology (IT) infrastructure for their businesses. They were not yet ready to have a large physical banking infrastructure such as having branches across Estonia.

Over the last thirty years, research into the uptake of Internet banking has been largely based on the theoretical model developed by (Davis et al. 1989) on emphasizing the centrality of the consumer whose characteristics, their knowledge and attitude to Internet banking, shape their interactions and decisions. However, this model was found not to be generally applicable to a variety of cultural contexts, without the addition of other factors.

A major limitation of this model was the assumption of the person as a rational decision maker. Knowledge was often incomplete, so decision making was not able to be made after considering all the facts. It appeared that the decision of whether to take up Internet banking or

not, was influenced by emotional responses to fears developed through media publicity about fraudulent activities, vulnerability, phishing, and so on. Further, in the Middle East, it is suggested that friend's referrals are also important.

The ecological model described below (Figure 1, after Coutts, 2007) has been developed to take account of these personal aspects. It emphasises the centrality of the consumer, their knowledge, and attitude to Internet banking shaping their decision about whether to engage with Internet banking services (IBS). This model acknowledges the complexity and interaction of the many factors identified in previous studies. It thus facilitates a greater understanding of Internet banking uptake, because it allows for the investigation of Internet banking adoption within the local settings which affect banking activities. The uptake of Internet banking also requires interpretation within the context of time, place and policy and thus this model, which sees individuals at the centre, appeared to have applicability.

This multilevel, multidimensional approach views the person's Internet banking behaviour developing within a complex system of relationships affected by the multiple levels of the surrounding environment: the microsystem, mesosystem, exosystem, macro system and chronosystem layers, as shown in diagram. The model incorporates individual characteristics, and institutional (Bank) and family factors that previous research indicates are significant, as well as allowing consideration of bigger picture political, economic, employment and educational systems that influence Internet banking uptake. The consumer's experiences within his/her immediate settings (microsystems), especially within the banking setting, are of major importance in IBS engagement, but the model also indicates how the wider macro system context comes to have an important bearing on the behaviours of individuals within their own unique microcosmic settings. The Macro system and Exosystem features the bigger picture, and the complete ecological model provides a context for the study of Internet banking uptake in Bahrain.

As well as having a strong legislative basis for growth in the banking and financial sector, Bahrain is reported as being one of the largest contributors and direct developers of electronic government in the GCC. This is illustrated by the development of effective e-Government portal services in Bahrain and the introduction of smart cards in 2005. These act as an identity (ID) card, driving licence and population registry card all in one, enabling integration of data between government agencies (Central Informatics Organisation, 2011, p. 1).

Bahrain's near neighbour, Saudi Arabia, has established e-banking rules which were replaced in 2011 with "Internet banking Security Guidelines" designed to prevent abuse specifically in the realm of e-banking (SAMA, 2010, p. 5), but as at the date of writing, no such specific legislation covering Internet banking yet exists in the Kingdom. Sociocultural factors also have an influence on the way business is conducted in Bahrain. Throughout Asia and the Middle East, social networks built on family connections are a significant force in all aspects of decision-making and they play a very important role in business activities, including finance and banking.

Wasta is the term used in the Arab world to refer to social networks or connections (Cunningham & Sarayrah, 1994, p. 1), whereas *guanxi*, is the Far Eastern equivalent. Although there is no single definition of *guanxi*, it is typically translated into English as personal connections. Though less widely researched, an appreciation of the concept of *wasta* is crucial for understanding how decisions are

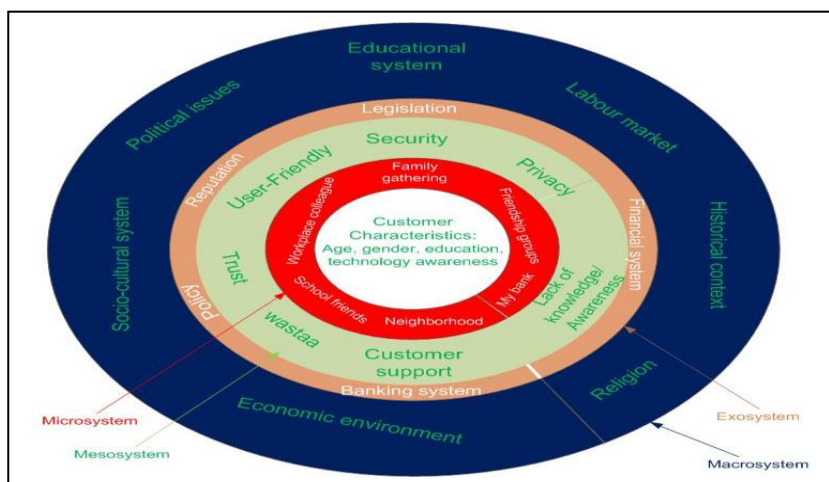
made in the Gulf Region because it permeates the culture of all Arab countries and is a force in every significant decision (Whiteoak, Crawford, & Mapstone, 2006, p. 468).

Table 2: Benefits and Limitations of Biometrics

Positive	Negative
To prove I am someone known to the system	To prove I am not someone known to the system
To prevent multiple users of a single Identity	To prevent multiple identities of a single user
Comparison of submitted sample to single claimed template - "one-to-one" under " the most common system design	Comparison of submitted sample to all enrolled templates - "one-to-many"
A "false match" leads to "false acceptance" (e.g. user was wrongly accepted by the system)	A "false match" or a "failure to acquire" leads to a "false rejection" (e.g. user was wrongly rejected by the system)
A "false non-match" or a "failure to acquire" leads to a false rejection"	A "false non-match" leads to a "false acceptance"
Alternative identification methods exist	No alternative methods exist
Can be voluntary	Must be mandatory for all
Tricked by submitting someone else's Biometric measures	Tricked by submitting no or altered measures

As an employee in the finance and banking sector for the last 20 years, the Researcher's own experience indicated that there is a reluctance for any Bahraini to open an account with a particular bank unless their family already has an established connection, they know someone there, or they have received assurance from a trusted friend that that bank is 'okay' to deal with that institution. According to (Mandhachitara & Poolthong, 2009) (2009, p. 132) the development and sustainability of customer relationships becomes increasingly important in retail banking, principally because of the homogeneity of service offerings, and banking products. With little to differentiate one bank from another in terms of products or services, customer loyalty becomes more dependent on quality service delivery and support, which in a Middle Eastern context, revolves round personal connections, relationships and trust.

Figure 1: Ecological Model



Key:

Microsystem: This is the layer closest to the people in Bahrain and contains the structures with which the person has direct contact. The microsystem encompasses the relationships and interactions a person has with his immediate surroundings (neighbourhood, bank staff, friendship groups, workplace colleagues, family gathering).

Mesosystem: This layer provides the connection between the structures of the person's microsystem (security, privacy, trust lack of knowledge/awareness, customer support, wasta)

Exosystem: This layer defines the larger social system in which the person does not function directly. The structures in this layer impact the person's development by interacting with some structure in her microsystem (policy, legislation, financial system, banking system)

Macrosystem: This layer may be considered the outermost layer in the person's environment. While not being a specific framework, this layer is comprised of cultural values, customs, and laws (political issues, educational system, labour market, historical context, economic environment, socio-cultural systems, and religion)

As illustrated in the framework diagram, the ecological conceptualisation of Internet banking uptake facilitates consideration of both consumers' interactions within local settings (bank, family and friends), and the impact of bigger picture influences, such as changes in ideologies and values (macrosystem) revealed through the policies and procedures adopted to implement the reforms (exosystem) that led to the establishment of Bahrain as the GCC financial hub.

Mesosystem Features of Internet Uptake in Bahrain

The mesosystem incorporates the linkages between the microcosmic settings of family, friends, work and their bank in which the person is central.

Family and Friends

Parents' and friends influence on their children's aspirations and career destinations are mesosystem effects which are likely to be associated with influences of the parents or friends in decision making towards selecting their bank accounts, wives and their careers after school graduation. In fact the change in the world due to technological advances which is transforming the way we communicate with others, had no effect in the Middle East on the way families and friends influence their children or friends in decision making.

Bank's Influence: Institutional Factors

As well as family background, previous research suggested that the uptake of Internet banking was related to institutional factors including size, policies, customer support, and response time in resolving customer's problems. Most of the customers are still reluctant in using Internet banking for reasons such as; regulation, legal issues are not yet clear, e-banking rules and regulation of both banks and Internet Service Providers.

Conclusion

Until recently the high cost of fingerprint sensors has rendered them economically nonviable for most retail organizations. However both the decreasing costs of the sensors and increasing reliability of the accompanying software used to enrol and compare fingerprints has resulted in an increasing number of cost-effective commercial systems being deployed to verify customers at point of sale (POS) terminals. Other important areas of application of this method of authentication in the banking industry are the ubiquitous automatic teller machines (ATMs) and Money Access Centres (MACs) (Wayman, D., & Maio, 2005, p. 58).

The literature associated with the uptake of Internet banking internationally suggests that the role of government in establishing a positive policy is based in role modelling. The application of e-business practices was very important as a factor in the adoption of this innovation. Similarly previous studies suggested that there was some sort of correlation between Internet usage and the uptake of Internet banking.

This paper provides an overview of research to establish factors known to have an impact on the uptake of Internet banking services in other parts of the world, and identifies that in the Middle East there may be other aspects that require consideration. In fact some of the factors inter-connect to each other, as security, privacy and trust can lead to a general distrust of technology no matter to him/her that each factor acts independently. User-friendliness and knowledge/awareness are also inter-connected, once the user can utilize the system he/she ultimately has enough knowledge about the technology that they are using. The researcher considers that the TAM model is not significant for this study, as the Bahrain cultural context is different from that in other developed countries, therefore, a new model has been developed based on an ecological framework including other factors such as relationship influences. Internet banking uptake is affected by Wasta or relationships in addition to the other commonly understood factors that impact the adoption of Internet banking in Bahrain.

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