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Internet Banking and Jordanian Corporate Customers: Issues of Security and Trust

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Abstract

Research on the acceptance behaviour of technology is sizeable, yet it is relatively heterogeneous and fragmented in the context of developing economies like Jordan. The paper tries to offer insights about two critical factors in acceptance behavior of Jordanian customers, namely, security and trust. This article puts together an integrated conceptual model for acceptance behavior of Jordanian Corporate customers that includes these two critical issues. Hypotheses are developed from extant literature, these indicate possible associations among the constructs of the model. Based on input received from 353 corporate customers, the proposed model is empirically tested using structural equation modeling. Of the hypothesized associations examined, five were found to be statistically significant and in the right direction. The results confirm most of the findings of previous research on the subject, while some fresh insights on the interrelationships of the constructs used are also revealed. The results of the study have serious implications for bankers, corporate online users, and business educators, who may use the empirically tested model as a diagnostic and monitoring tool in explaining the acceptance behavior of Jordanian business users of online banking. This paper concludes that security and trust should be integrated to perceived usefulness and perceived ease of use in explaining acceptance behaviour of corporate customers.

Keywords: **Trust, Security, Buyer-seller relationships; Banking, TAM.**

INTRODUCTION

E-business is now a standard in industry. The Internet is transforming marketing and trade (Shashank Rao, Goldsby, & Iyengar, 2009). Many companies have found successful ways for advertising, marketing, and distributing their products and services online. Others are hesitant because they are afraid of being left far behind by the current online businesses (Herbig & Hale, 1997). Lots of activities such as communicating, transacting, environmental scanning and collaborating with other organizations are now done through the Internet and the world-wide-web (Bennett & Barkensjo, 2005).

Companies should allow customers to control the timing and extent of buyer-seller interactions through the customization of products and services (Harrison-Walker & Neeley, 2004). Electronic technology allows cost effective customized response (Chaston & Mangles, 2003). This is obvious in the orientation of lots of websites towards having more interactivity and support of relationships (Srirojanant & Thirkell, 1998). The Internet brought solutions to some of the difficulties in customer relationship management, by providing one-to-one interactivity and customization (O'Leary, Rao, & Perry, 2004).

Marketing on an Internet environment involves building and maintaining customer relationships using online activities to assist the exchange of ideas, products, and services (Ngai, 2003). Internet marketing makes use of digital interactive technologies and information technology to fulfil the traditional practices of creating, communicating

and delivering value to customers (Gilmore, Gallagher, & Henry, 2007).

The internet environment has changed and still changing the rules of traditional business (Eid, Trueman, & Ahmed, 2002). The Internet is creating higher customer expectations and customers are expecting closer relationships (Chaston & Mangles, 2003). However, the emergence of the Internet does not change the need to establish strong customer relationships (Harrison-Walker & Neeley, 2004). Businesses still need to attract customers, build trust, and create satisfaction. Firms interact with their customers to build committed relationships.

Internet-based relationships seem to be sufficiently different from traditional relationships and therefore require specialized attention (Colgate, Buchanan-Oliver, & Elmsly, 2005). The Internet alters the customers' perspective of the benefits gained from that relationship. As a result of this, customers are transferring physical, tangible elements of a relationship into the intangible Internet environment. By dong this, they try to gain reassurance and strengthen the relationship. The Internet influences two types of bonds in a relationship. These are grouped into technical and social elements, or structural and social bonds (Sally Rao & Perry, 2003).

The Internet can be used effectively in a business-to-business context (Sally Rao & Perry, 2003) and the assessment of the technology impact on relationship marketing has largely been restricted to industrial marketing (McGowan, Durkin, Allen, Dougan, & Nixon, 2001). Business-to-business Internet marketing is concerned chiefly with communications and transactions conducted using Internet-based technologies. In the context of this research, business-to-business Internet marketing consists of online marketing communications and online banking.

ONLINE MARKETING COMMUNICATIONS

As Internet technologies became more common, they are being used at the expense of more traditional and personal forms of communication (Harrigan, Ramsey, & Ibbotson, 2008). The Internet is more than a marketplace for conducting transactions; it is a medium for communicating and interacting with customers and thus will affect the roles that marketing professionals play in their businesses (Heinen, 1996). organizations popularly use the Internet for two main purposes, sourcing information from websites and e-mail transmissions both internally within the organization and with the outside world (Barry & Milner, 2002).

An increasing number of companies use the Internet for marketing communications. There are international differences in how the Internet is used for marketing purposes (Lagrosen, 2005). This calls for integrating marketing communications and to develop and build a database of customer information and transactions (Heinen, 1996). Changes in organisational structure may be needed in order to accommodate this new way of doing business.

The Internet can be utilized as a niche instrument and a medium for highly customized contacts with existing and potential customers (Grönroos, Heinonen, Isoniemi, & Lindholm, 2000). The Internet is a marketing communication media and a tool for direct marketing and relationship marketing. The relationship is built based on past experience

and is developed over time using information collected through transactions with customers. This growing knowledge leads to the customization/personalization of marketing communications (Rowley, 2004).

One main attraction of the Internet as a relational tool is the level of interactivity that can exist between a buyer and a seller (Durkin & Howcroft, 2003). The Internet provides a new form for word-of mouth communication that enables people to seek advice and to discuss purchase suggestions. One of the appealing benefits of the Internet to service companies is the use of the Internet in two-way marketing communications (Lagrosen, 2005).

Combining the global nature of the Internet with its communicative capabilities makes it a perfect medium for interactive marketing (Park & Jun, 2003). This has helped in emphasising the information-based approach to marketing due to the interactive exchange of information, this can be a source of competitive advantage, quality and speed (Beech, Chadwick, & Tapp, 2000).

Without customer-supplier information sharing, relationship marketing would be an extremely difficult process to manage (Chaston & Mangles, 2003). The degree and speed of communication enabled by the Internet makes it a synergistic component of an effectual database marketing strategy (O'Leary, et al., 2004).The Internet allows repeat real-time communications, and therefore there is strong link between the Internet functions and the implementation of customer relationship management (CRM) (Srirojanant & Thirkell, 1998). The Internet is enabling businesses to interact with large numbers of customers, whilst still treating them individually (Harrison-Walker & Neeley, 2004).

Lots of businesses are realizing the Internet as an essential communication tool. It is removing the biggest physical barrier to communication, namely, distance and helping companies to communicate with customers everywhere with the same cost and ease (Kiani, 1998). This removal of geographical and physical boundaries enables organizations far and wide to communicate with each other and to retrieve information quickly and easily (Gattiker, Perlusz, & Bohmann, 2000). Relationship creation occurs as interactions increase and both parties work together, and mutual value creation happens by working together in a way that is beneficial to both parties (Rowley, 2004).

ONLINE BANKING

As a result of the growing use of the Internet globally, there has been an apparent increase in the use of the Internet for financial service transactions (Ibbotson & Moran, 2003). There are massive opportunities that the Internet has brought to the banking industry in recent years including the rise of pure online banks. Online banking has gained special attention in academic studies (Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004). Attractiveness to Internet banking is enhanced by the ability to conduct banking transactions anytime and anywhere, faster and with lower fees compared to using traditional bank branches (Sayar & Wolfe, 2007).

The banking sector is an interesting case for service innovation (using the Web for commercial purposes through Internet banking). Internet banking allows for direct

access to financial information and to undertake financial transactions with no need to go to the bank (Rotchanakitumnuai & Speece, 2003). Banking is no longer bound to time or geography. Customers are enjoying relatively easy access to their accounts 24/7.

There are a number of reasons which are fundamental for the development and diffusion of online banking (Pikkarainen, et al., 2004). The internet offers a potential competitive advantage for banks, this advantage lies in the areas of cost reduction and more satisfaction of customer needs (Bradley & Stewart, 2003 ; Jaruwachirathanakul & Fink, 2005). Encouraging customers to use the Internet for banking transactions can result in considerable operating costs savings (Sathye, 1999). The Internet is the cheapest distribution channel for standardised bank operations, such as account management and funds transfer (Polasik & Wisniewski, 2009). Customer dissatisfaction with branch banking because of long queuing and poor customer service is an important reason for the rapid movement to electronic delivery (Karjaluoto, Mattila, & Pento, 2002). The commitment of senior management was also found to be a driving force in the adoption and exploitation of technology (Shiels, McIvor, & O'Reilly, 2003).

Despite the many benefits that Internet banking provides to both banks and their customers; acceptance of this technology has not been equal in all parts of the world (Karjaluoto, et al., 2002). And even though the vast number of existing studies and the growing interest in the introduction and development of Internet banking, very little is known about the variables that truly determine the adoption of Internet Banking (Hernandez & Mazzon, 2007). Acceptance and usage of online banking in Jordan is still considered to be low due to a number of reasons.

Until the late 1990s studies in electronic banking were focused on analyzing customers' perception of specific technologies such as direct banking, telephone banking and home banking. Later descriptive and relational studies on Internet banking and its adoption started to grasp researchers' attention (Hernandez & Mazzon, 2007).

TECHNOLOGY ACCEPTANCE MODEL

The technology acceptance model (TAM) was one of a number of studies that have helped in providing theoretical frameworks for research in the adoption of information technology and information systems over the last two decades. TAM has been used extensively as the basis of a range of empirical studies. As a result of several applications and replications it is believed that TAM is one of the most well-established, robust, parsimonious, and influential in explaining IT/IS adoption behaviour and consistently explains a substantial proportion of the variance in usage intentions and behaviour (Lu, Yu, Liu, & Yao, 2003; Lymperopoulos & Chaniotakis, 2005; McKechnie, Winklhofer, & Ennew, 2006).

TAM has its roots in the theory of reasoned action (TRA) which explains individuals' behaviour on the basis of factors such as beliefs and intentions (Ortega, Martinez, & Hoyos, 2006). Because TRA is very general and can virtually explain any human behaviour, Davis introduced TAM as an adaptation of TRA, specifically designed to explain computer usage behaviour in organisations. TAM hypothesizes that two particular beliefs are of primary relevance to computer acceptance behaviour; namely perceived ease of use (PEOU) and perceived usefulness (PU) (Davis, Bagozzi, &

Warshaw, 1989). TAM has strong behavioural elements, assuming that individuals are free to act without limitation when they form their intention to act, these formed intentions will then be realised as actions. Davis (1989) defined "perceived usefulness" as "the degree to which a person believes that using a particular system would enhance his or her job performance", and perceived "ease of use" as "the degree to which a person believes that using a particular system would be free of effort". Moreover, "attitude" can be understood in terms of an individual's feelings or emotions about using the technology, whereas "intention to use" was understood in terms of the likelihood that an individual would use the technology in the future (Lymperopoulos & Chaniotakis, 2005).

Many constraints can be faced in the real world, such as limited ability, time constraints, environmental or organizational limits, or unconscious habits which will limit the freedom to act (Richard P. Bagozzi, Davis, & Warshaw, 1992). The process of modelling PEOU and PU as distinct constructs allows researchers to better trace influences of all of the affecting factors on information systems acceptance (Davis, 1989; Pikkarainen, et al., 2004). The greater the perceived usefulness and the perceived ease of use, the better are people's reactions towards the innovation and the higher their intention to adopt it (Hernandez & Mazzon, 2007). According to TAM, perceived usefulness (PU) and perceived ease of use (PEOU) pressure an individual's behavioural intention to use a system, which determines actual use (Schaupp & Carter, 2005).

Extant research has tended to examine user acceptance of the internet in various contexts mainly as a dichotomy (adoption/non-adoption), thus ignoring the process underlying adoption (McKechnie, et al., 2006). This paper aims to provide insights into factors determining factors impacting adoption of the internet by Jordanian users of online banking.

TRUST

It is most frequently cited in the literature and one of the most common constructs investigated in relationship marketing studies (Samiee & Walters, 2003). Trust is central to the development of successful service relationships in business-to-business markets and for the achievement of customer loyalty (Rauyruen & Miller). In a business-to-customer environment, trust between parties is established very differently from business-to-business environments. In a business-to-customer context the relationship is often very short term and more transaction focused (Bennett & Barkensjo, 2005) unlike in business-to-business, where the relationships are of a long term.

Anderson and Narus, (1990) defined trust in manufacturer-distributor relationships as a belief that the partner company will perform actions that will lead to positive outcomes, and that this partner will not take unanticipated actions that may result in negative outcomes for the firm. There is some sort of agreed consent that trust encompasses two essential elements: credibility; and benevolence (Doney, Barry, & Abratt, 2007). Credibility requires the partner to be sincere, stand by its word, and to fulfil its promises and obligations. Benevolence requires being interested in the partners' welfare by not taking actions that would have a negative impact on him.

There is an emerging body of literature related to trust in e-commerce which is derived from traditional research on trust (Papadopoulou, Andreou, Kanellis, & Martakos, 2001).

These studies contribute only partially due to the relative newness and complexity of this issue. Current literature in e-commerce offers very little insight about how trust is developed and maintained (Ndubisi & Wah, 2005). Trust plays an important role in electronic or traditional transactions, it is critical for establishing a long term business relationship, especially if partners are located in different places where rules and regulations vary, many partners often do not know each other and have less control over data while they are being transferred (Roy, Dewit, & Aubert, 2001).

PERCEIVED SECURITY

Consumers perceive a greater uncertainty when a transaction is carried out using the Internet and are very concerned about security in the online context (Casaló, Flavián, & Guinalíu, 2007). Perceived usefulness and ease of use may not accurately reflect the motivation of users of online applications under security threats. Using online applications under security threats is associated with risk. For this reason TAM was extended to include perceived security of using online applications.
Consumers associate security risk with loss of money in cash or through credit cards (Aldás-Manzano, Lassala-Navarré, Ruiz-Mafé, & Sanz-Blas, 2009). Previous research in countries with different levels of e-commerce adoption shows that perceived security risk is an important predictor of Internet banking adoption.

RESEARCH HYPOTHESES

The integration of trust with TAM variables has its theoretical and empirical support. Trust is a determinant of perceived usefulness in an on-line environment (Pavlou, 2003). It is also argued that trust in the online context increases perceived ease of use (Chircu, Davis, & Kauffman, 2000). By reducing the need for the consumer and control the situation and facilitating transactions making them effortless. Therefore we hypothesize that:

H1: Trust is positively associated with perceived ease of use
H2: Trust is positively associated with perceived usefulness

Perceptions of insecurity have been found to impact perceived usefulness in the context of service employees (Walczuch, Lemmink, & Streukens, 2007) and mobile computing (Lapczynski & Calloway, 2006) and is expected to be the same in the case of online banking:

H3: Perceived security is positively associated with perceived usefulness
In the online environment success of e-commerce is largely dependent upon the emergence of guaranteed security (Kolsaker & Payne, 2002). The relationship between building trust and security of electronic transactions has already been established (Tsiakis & Sthephanides, 2005) where perceptions of security would influence trust (Chellappa & Pavlou, 2002):

H4: Perceived security is positively associated with relationship trust
The greater the perceived usefulness and the perceived ease of use, the better the reactions and higher the intentions to adopt to innovations (Hernandez & Mazzon, 2007). Consistent with TAM; perceived ease of use is a causal antecedent to perceived

usefulness (Davis, 1989):

H5: Perceived ease of use is positively associated with perceived usefulness

RESEARCH METHODOLOGY

Scope of the study

The study focuses on business / corporate customers who use internet for banking purposes, corporate users of online banking were identified from the Jordanian Ministry of Trade and Industry, one of the most reliable sources of information about Jordanian companies. Using this directory and by cooperating with Jordanian banks, the researcher was able to identify the sampling frame from which the data was drawn. For a sample to be representative it should summarize all relevant information about the parent population contained in the sample. Participants in the survey were asked a number of demographic questions to establish representativeness by comparing the sample with the whole population of Jordanian corporate users of online banking in terms of business sectors, sizes (number of employee's), and years in business.

Survey instrument

A questionnaire was used as the research survey instrument; it comprised a series of statements reflecting the items operationalising the constructs of the study. All statements were measured on a seven-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). The questionnaire was first written in English and then translated into Arabic. In order to ensure linguistic consistency, this was back-translated into English and the necessary corrections were made. The questionnaire was pre-tested and revealed no problems.

Data collection

A covering letter explaining the purpose of the study, together with a copy of the questionnaire, was sent to the person responsible for managing the company relationship with its bank. To encourage participation in the study, respondents were promised that they would receive a summary of the research findings soon after the completion of fieldwork. Four weeks after the questionnaires were dispatched, a reminder letter, accompanied by an extra copy of the questionnaire, was sent to those firms that had not responded. The entire fieldwork process lasted for approximately five months, resulting in 353 returned adequately completed questionnaires.

Sample profile

Half of participant firms were concentrated in the Greater Amman Municipality. The rest of the sample was distributed into the three major cities of Zarqa, Irbid; and Aqaba. This distribution is consistent with the dispersion of Jordanian companies among these four regions.

Statistical method

To test the proposed conceptual model, the technique of structural equation modeling (SEM) was employed

DATA ANALYSIS AND FINDINGS

This section presents the results of the full hypothesised model developed for this research. The model is assessed for goodness of fit before the full hypothesised model was tested (Anderson & Gerbing, 1988).

The internal consistency of the scales was examined using a combination of item-to-total correlations and exploratory factor analysis. Items that exhibited a low item-to-total correlation or high cross loadings were dropped. Each construct was subsequently represented by a composite measure, which was the average of the items highly loaded on each construct. The fact that none of the correlations was above 0.80 is evidence of the non-existence of multi-collinearity problems.

Anderson and Gerbing (1988) comprehensive two-step modelling approach was followed as a basis for making meaningful assumptions about the theoretical constructs and their interrelations. This approach thinks of model-building as an analysis of two conceptually distinct models. A confirmatory measurement, or factor analysis, model specifies the relations of the observed measures to their underlying constructs, with the constructs allowed to intercorrelate freely. A confirmatory structural model then specifies the causal relations of the constructs to one another as hypothesize by theory. The measurement model provides a confirmatory assessment of convergent validity and discriminant validity and the structural model then constitutes a confirmatory assessment of nomological validity.

MEASUREMENT MODELS ESTIMATION

Structural model

The normed chi-square statistic was significant (2.4, $p<0.05$). Goodness-of-fit revealed values within the commonly accepted critical levels. Specifically, the root mean square error of approximation (RMSEA) was 0.07; the comparative fit index (CFI) was 0.91. These statistics demonstrate that the model provide a good fit to the data (Hair, Babin, & Money, 2002).

Convergent validity was satisfactory, because the factor loadings for all items comprising each construct exceeded 0.40, while the *t*-value for each item was greater than 4.0 (R. P. Bagozzi & Yi, 1988). Discriminant validity was also evident, since the confidence interval around the correlation estimate for each pair of constructs examined never included 1.0 (Anderson & Gerbing, 1988). Finally, construct reliability was acceptable, because the Cronbah's alpha coefficients estimated for each construct ranged from 0.72 to 0.87 (Nunnally & Bernstein, 1994). It can be concluded that the measurement procedure measures what it is actually intended to measure. The fitness indices indicate that the research model fits the survey. All overall goodness-of-fit statistics were within acceptable values.

Hypotheses Testing

Estimating the proposed model revealed that all paths except for (Trust → Perceived Usefulness) are statistically significant. These results of research hypotheses with associated standardized path coefficient values for the proposed model are exhibited in

Table 1.

Table 1: Hypotheses and Path Coefficients

Hypothesis	Path	Regression Weights	Standardised Regressions	S.E.	C.R.	P
H2	Security → Trust	.310	.271	.054	5.751	.001
H3	Trust → PEOU	.183	.233	.037	4.885	.001
H4	Security → PU	.262	.326	.039	6.793	.001
H5	PEOU → PU	.562	.629	.042	13.238	.001
H6	Trust → PU	.089	.127	.022	3.966	.001

DISCUSSION OF FINDINGS

The results indicated that the research model met all the established criteria. In brief, all the five hypotheses were supported except for one. All the relationships are positive.
From Table 1, we can see that perceived ease of use (PEOU) has a direct positive and substantial effect on perceived usefulness (PU), this is consistent with previous research. The use of online banking needs to be easy enough so that corporate customers will be able to discover its usefulness.

Trust has a significant, positive affect on ease of use but not on usefulness. The more a user trusted the bank and its website, the higher their belief that online banking was easy. Higher levels of security may also make online banking more useful.

The findings of this study make a contribution to theory by extending the variables of TAM with the inclusion of trust and security as precursors of perceived usefulness and perceived ease of use. This inclusion was empirically shown to be relevant with the sample chosen for this research and TAM model was adapted accordingly.
Security appears to make the biggest contribution overall. Perceptions of security directly affect trust and perceived usefulness and affects perceived ease of use indirectly. It is therefore a major contributor to the acceptance of internet banking by Jordanian corporate customers.

LIMITATIONS AND FUTURE RESEARCH

From the many variants of electronic commerce; this research focused on online banking. A similar model could be tested in different contexts. Additionally, customers can use the Internet to browse and then engage in a transaction offline. For example, reading descriptions and reviews and comparing bank services online is common, however the actual transactions are seldom made online. Although browsing was a key component to the decision to purchase, the actual purchase was made offline.

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