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FACTORS INFLUENCING THE INTENTION TO ADOPT INTERNET BANKING SERVICES AMONG SMALL AND MEDIUM ENTERPRISES (SMEs) IN YEMEN

BY

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ABSTRACT

Despite the wide adoption of Internet banking service in developed countries, its application is still low in developing countries like Yemen. Moreover, there is a dearth of empirical research on Internet banking services in Yemen and this makes it necessary to carry out research on the adoption of Internet banking service. The aims of this study is to examine and investigate the main factors that influence the adoption of Internet banking services by Small and Medium Enterprise (SME) managers or owners in Yemen. The research framework consists of nine exogenous variables and one endogenous variable. The exogenous variables consist of attitudinal and environmental factors while the endogenous variable comprises of intention towards Internet Banking (IB). This research also identifies the role of demographic factors (size, type and ownership of organization) as moderating variables that impact on SMEs' intention to adopt Internet banking service in Yemen. In addition, this study explains how the Technology Acceptance Model (TAM) with Technology Organization Environment (TOE) framework used in examining the factors of Internet banking service adoption among SMEs in Yemen. The sample of the present study consisted of a total of 311 SMEs, analyzed using Structural Equation Modeling (SEM) in order to examine causal relationships among the study latent variables. The indirect exploratory effect of the moderators is examined using Multiple-Group Analysis (MGA). The results of the study indicate that perceived usefulness, ease of use, regulatory support and competitive pressure have significant and positive effect on intention towards IB adoption among SMEs in Yemen. However, perceived trust, risk and ICT readiness have no significance, only negative effect on intention towards Internet banking. Awareness and financial institution support are also not significant but have positive influence towards IB adoption. Furthermore, the findings of the study reveal that type of organization has a moderating effect on managers/owners intention towards IB adoption among SMEs in Yemen. On the other hand, size and ownership of organization are not significant moderators on managers'/owners' intention towards IB adoption. It can be concluded that a combination of TAM and TOE framework explains IB adoption factors well among SME managers/owners in Yemen.

ملخص البحث

بالرغم من توسع تبني الخدمات المصرفية عبر الانترنت في الدول المتقدمة لكن مايزال تطبيقها في الدول النامية مثل اليمن ضعيفاً. إضافة إلى ذلك يوجد قلة في البحوث التطبيقية على الخدمات المصرفية عبر الإنترنت في اليمن. وهذا يصنع ضرورة لتنفيذ البحث على الخدمة المصرفية عبر الانترنت. الغرض من هذه الدراسة هي أن نفحص و نتحقق من العوامل الرئيسة التي تؤثر على تبني الخدمات المصرفية عبر الانترنت بين مدراء وملاك المشروعات الصغيرة و المتوسطة في اليمن. هيكل البحث يتكون من تسعة متغيرات مستقلة وواحد متغير تابع. المتغيرات المستقلة تحتوي على العوامل (الموقفية) السلوكية والبيئية بينما المتغير التابع مكون من تبني الخدمة المصرفية عبر الانترنت. هذا البحث يحدد دور العوامل الديمقرافية (حجم ونوع وملكية المشروع) كمتغيرات ضابطة(فعالة) في تأثير نوايا مدراء المشروعات الصغيرة و المتوسطة لتبني الخدمة المصرفية عبر الانترنت في اليمن. أيضا هذه الدراسة توضح كيفية استخدام نظرية قبول التكنولوجيا (TAM) مع نظرية التكنولوجية والمؤسسية و البيئية (TOE) في اختبار عوامل تبني الخدمات المصرفية عبر الانترنت بين المؤسسات الصغيرة و المتوسطة. عينة الدراسة الحالية تتكون من 311 مؤسسة صغيرة ومتوسطة تم التحليل باستخدام برنامج نمذجة المعادلة الهيكلية (أموس)لتحديد العلاقة السببية بين المتغيرات الكامنة. تأثير اكتشافية غير مباشرة للعوامل الفعالة تم اختباره باستخدام تحليل متعدد المجموعات. نتائج الدراسة أظهرت أن إدراك المنفعة و سهولة الإستخدام والدعم القانوني و الضغط التنافسي تمتلك تأثيراً كبيراً وايجابياً على نية تبني استخدام الصيرفة الاكترونية عبر الانترنت . بينما الثقة و إدراك المخاطرة وجاهزية تكنولوجيا الاتصالات و المعلومات لها تاثير ضعيف و سلبي على الرغبة في استخدام الصيرفة الاكترونية عبر الانترنت وكذلك وعي العملاء ودعم المؤسسات المالية لها تأثير ضعيف ولكن ايجابي على نية تبني هذه الخدمة. كما أن نتائج الدراسة اكتشفت أن نوع المؤسسة عامل مؤثر فعال على نية مدراء و ملاك المشروعات الصغيرة و المتوسطة في اليمن . في الجانب الاخر أظهرت النتائج أن حجم و ملكية المشروع عاملان غير مؤثرين على توجه المدراء و الملاك لتبني هذه الخدمة. نستطيع أن نختم ان دمج نظرية TAMونظرية TOEتوضح ان عوامل التوجه نحو تبني الخدمات المصرفية عبر الانترنت جيدة بين مدراء و ملاك المشروعات الصغيرة و المتوسطة في اليمن.

APPROVAL PAGE

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DECLARATION

I hereby declare that this dissertation is the result of my own investigation, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degree at IIUM or other institutions.

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To The Departed Soul of My Father

To my Beloved Mother,

Brothers and Best Friends

Saleh & Mohammed,

To My Sister

To my Faithful Wife

& Beloved Children

الإهداء

إلى وطني الحبيب —اليمن –أعطى بلا حدود

وإلي والدي (رحمة الله عليه) ووالدتي أطال الله في عمرها اللذين رباني بلا إنتظار لأي مردود

وإلى أخويَّ محمد و صالح وأختي الفاضلة اللذين لهم الدور الكبير في الوصول لهذا العمل المشهود

وإلى زوجتي وأولادي الذين عانوا معي في إنتظار الأمل المنشود

وإلي جميع الزملاء والأصدقاء الذين كان لهم النصح و الإرشاد وساعدوا بلا قيود

إلى كل هؤلاء

. أهدي هذا العمل المتواضع الذين لولاهم بعد فضل الله سبحانه وتعالى ما كان لهذا الإنجاز أن يظهر

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CHAPTER ONE

INTRODUCTON

1.0 INTRODUCTION

This chapter presents the research issue, background of the study and the statement of the problem. It also highlights the objectives and research questions, brief explanation of the study's theoretical, managerial and policy importance. It also provides the justification of the study, its scope and definitions of key terms.

1.1 BACKGROUND OF THE STUDY

Over the past few decades, the world has seen an unprecedented evolution of information technology (IT) which has affected life as we know it. All industrial sectors have been affected by this evolution, especially the services sector. In recent years, the banking industry has undergone rapid technological changes and development. As a consequence, banks have launched multiple service access methods via new delivery channels like the Automated Teller Machine (ATM) and Internet Banking Service (IBS). The growing importance of Information Systems (IS) in banks was in the establishment of a fully-fledged IBS by the Security First Network bank in the USA in October 1995 (Grandy, 1995). IBS is a new type of information system that uses the innovative resources of the Internet and allows customers to engage in financial activities through virtual space and environments (Al-Majali, 2011).

IBS is extremely beneficial to both banks and customers. The main benefits to banks are cost savings, reaching new segments of the population, efficiency, enhanced

reputation and better customer service satisfaction (Nasri, 2011; Khrerwesh, 2011). IBS also offers a competitive advantage to banks by providing an unlimited distribution network. Through this technology, banks are able to provide services electronically such as lowering transaction costs and adding value to the customer-banker relationship. Internet enables banks to offer high value-financial services at lower costs (Al-Sukkar & Hasan, 2005).

In addition, Jayawrdhena and Foly (2000) suggest that IBS offers new values to customers such as reduced costs in accessing and using bank services, increased comfort and time-saving transactions that can be made seven days a week and 24 hours a day without requiring physical interaction with the bank speed of transaction. Moreover, a comprehensive IBS strategy is essential for success in the increasingly competitive financial service market. Competition and changes in technology and lifestyles have made banking more competitive and innovative. Due to the speed of technological changes, banks are forced to continuously search for alternative and innovative products and services to keep up with the rapidly changing world (Jeeven, 2000).

Unfortunately, in spite of all these advantages, many customers of financial institutions have yet to embrace these technologically advanced services offered by the banking industry especially in the Middle East and in Yemen in particular (Khalel & Micheal, 2007; Al-Kibsi, 2010; Al-Majali, 2011). The use of Information Technology (IT) enables employees to work anywhere. The effect of IT on businesses has been the subject of many studies in developed countries such as in the USA and European countries. Many researchers have analyzed psychological, managerial, infrastructural, organizational and economical factors of diffusing IT with commerce in developed countries. However, the relationship of IT with commerce in developing

countries has not been significantly studied (Trafdar & Vaidya, 2006). The success of IB is not determined only by banks or government support, but also by clients' acceptance. The customers have a great influence to adopt IB and they decide ultimately on whether they will use IB based on their individual needs (Pikkarainen, Karijaluoto & Pahnila, 2004).

Since the success or failure of IB is contingent upon the degree of its adoption, there is a need to investigate which factors influence customers' intention towards Internet Banking Adoption (IBA). This study attempts to identify and better understand these factors by focusing on the Yemeni banks' customers especially the small and medium sized-enterprises (SMEs) whereby their knowledge can help the banking industry to formulate its marketing strategies to promote new forms of IB systems in the near future in Yemen.

1.2 STATEMENT OF THE PROBLEM

Despite the provision of electronic infrastructure by Yemeni banks and spending millions of dollars annually to adopt electronic banking, Internet Banking Service Adoption (IB ADOPTION) is very low and minimal in Yemen (CAC Bank, 2012; Al-Hareri, 2008; Homaid, 2010; Zolait, Mattila & Sulaiman, 2009; Al-Ajam & Nor, 2013).

According to some researchers in this area, banks in Yemen have websites on Internet where approximately 45% of them only offer limited services to their customers through their websites while five banks support customer transactions via the web (Zolait, 2009; Al-Hareri, 2008; CAC Bank, 2012). However, active Internet services in the business affairs of Yemeni banks and trade companies have not reached the required level at which the Yemeni business can benefit from participating in

electronic commerce (e-commerce) activities (Zolait, Ibrahim & Farooq, 2010; Al-Kibsi & Lind, 2011). According to CAC Bank (2012), electronic banking services have affected the performance of Yemeni banks negatively through their negative impact on profitability. This is because bank customers still depend on traditional channels to carry out their banking transactions.

Some customers report a feeling of dissatisfaction with technology based banking service quality because they have high perceived risk, distrust, difficulty of use and lack of awareness towards the use of IB and its benefits. They also have a low level of users' knowledge of security technologies and mechanisms applied in Internet transactions (Zolait et al., 2009; Al-Hareri, 2008; Al-Kibsi, 2010; MarebPress, 2009; CAC Bank, 2012). Some of the main reasons of very low IB adoption in developing countries especially in Yemen, could be declining and lack the environmental factors such as information communication technology (ICT) readiness, regulatory support, financial institution support and competitive pressure (Al-Nahian, Shahriar & Nayeema, 2009; Al-Hareri, 2008; Nupur, 2010; Worku, 2010; Zolait, 2009; Alasrag, 2008; Al-Kibsi, 2010; Al-Majali, 2011).

In contrast, the Yemeni government encourages implementing IT projects that enable payment and transaction systems through the Internet like e-Rail, e-stamp, e-payment of electricity, water and telephone bills. The government had also reduced about 40% of the cost of Internet tariff in 2011 (Ministry of Telecommunication and Information Technology, 2011). This is because Yemen needs a modern and strong banking system of easy-money transactions which cannot be achieved without the adoption of IB. This becomes more relevant when the government of Yemen joined the World Trade Organization (WTO) in 2014 (Ministry of Industry and Trade, 2014).

Yemen also occupies an attractive geographical position in the Maria trade route covering the Middle East, North Africa and European countries.

In terms of focus, previous studies have mainly emphasized on individual customers or large corporate firms but small and medium sized-enterprises (SMEs) have often been ignored (Padachi, Rojid & Seetanah 2010). There is a need to research on identifying factors that influence the adoption of IB by SMEs. This is because, micro, small and medium enterprises (MSMEs) in Yemen represent approximately 90% of the workforce and they also contribute to 95% of the country's GDP (Ministry of Industry and Trade, 2011; Alasrag, 2008). Another reason is because the Internet can be used effectively in the business-to-business context (Alnsour & Al-Hyari, 2011). Business-to-business IB is chiefly concerned with communications and transactions conducted using Internet based technologies; therefore, this research attempts to bridge this gap by investigating the use of IB among Yemeni SMEs.

Prior studies on IB adoption have been mainly conducted in developed countries. Given the different population and culture in Yemen from developed countries, it is necessary to identify the factors that are more relevant to this context. Moreover, most of the technology adoption theories and models have not been extensively tested outside developed countries. Only few studies have been done in Jordan (Al-Majali, 2011; AbuShanab, 2005), Oman (Al-Hajri 2008), Mauritius (Padachi et al., 2010), Bangladesh (Al-Nahian et al., 2009), Yemen (Zolait et al., 2009; Al-Kibsi, 2010), Saudi Arabia (Al-Somali et al., 2009) and Nigeria (Francis & Babajide, 2009).

Furthermore, previous studies did not identify the prominent predictors utilizing an integrated framework based on human psychological behavior and environmental

support factors. In addition, there are three moderators that indirectly impact behavior intention to adopt IB. The three moderators are size, type and ownership of organization. Therefore, this study fills this gap by introducing a conceptual framework merging the Technology Acceptance Model (TAM) into the Technology Organization Environment framework (TOE). Thus, the model generated from this research may be a useful tool for academics to understand how these factors are related.

1.3 RESEARCH OBJECTIVES

This research tries to add to the body of knowledge in the area of technology acceptance and extends our knowledge of the factors affecting IB adoption by SMEs in Yemen. Therefore, this study seeks to achieve the following objectives:

1. To examine the level of intention to adopt IB applications among SMEs.
2. To determine the important predictors of SMEs' intention towards IB adoption.
3. To investigate the relationship between attitudinal factors (usefulness, ease of use, risk, trust and awareness) and intention towards IB adoption by SMEs.
4. To examine the relationship between environmental factors (ICT readiness, regulatory support, financial institution support and competitive pressure) and intention towards IB adoption by SMEs.
5. To investigate the role of demographic factors (size, type and ownership of the organization) as moderators in the intentions towards IB adoption by SMEs.

6. To evaluate the applicability of the Technology Acceptance Model (TAM) and the Technology Organization Environment (TOE) framework as underpinning theories to explain IB adoption in Yemen.

1.4 RESEARCH QUESTIONS

1. What is the level of intention to adopt IB applications among SMEs?
2. What are the important predictors of SMEs' intention to adopt IB?
3. What is the relationship between attitudinal factors (usefulness, ease of use, trust, risk and awareness) and intentions towards IB adoption by SMEs?
4. What is the relationship between environmental readiness factors (ICT readiness, regulatory support, financial institution support and competitive pressure) and intention towards IB adoption by SMEs?

5a. Do size, type and ownership of organization moderate the relationship between attitudinal factors and intention towards IB adoption?

5b. Do size, type and ownership of organization moderate the relationship between environmental factors and intention towards IB adoption?

6. How can the underpinning theories of Technology Acceptance Model (TAM) and Technology Organization Environment (TOE) framework be used to explain IB adoption in Yemen?

1.5 SIGNIFICANCE OF THE STUDY

Studying IB determinants in developing countries like Yemen does not only serve the development of technology in Yemen but can contribute to the body of knowledge in