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Factors Affecting Information Communication Technology Acceptance and Usage of Public Organizations in Saudi Arabia

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ABSTRACT

Recent developments in information communication technology (ICT) have heightened the need of more study in this topic. There is a real risk of the acceptance of ICT by some and not others contributing to the rejection. The study approaches the technology acceptance from the perspective of administration by examining the use of ICT and e-services in the public environment. The theoretical framework variables of the technology acceptance model (TAM) are examined. The study also investigated the effect of the model of organization readiness to change (MORC) Individual Differences "recipients' beliefs" as external variables, in addition subjective norm, and volunteer motivation as the moderating. The study tested the current usage as mediating variable between ICT believes and attitude to change. Most studies in ICT have been carried out in private sectors in Saudi Arabia. The survey instrument uses to collect the data is a self administrated questioner developed based on the technology acceptance questioner as used by Davis and Venkatesh in (1989). The research population is Saudi workers in public organization. The research tool is structure equation modelling (SEM), which required a minimum sample of 200 respondents. The study contributes to knowledge in the field of technology acceptance research. Mean while Technology Acceptance Model (TAM) found to be applicable in the Saudi public environment, the study found that leadership support and lack of training are the factors obstacles of the e-government uses. When introduced as mediators, the results verify that current usage has no effect on technology believes. Finally the findings provide invaluable implication to theory and practice.

Key words: Technology Acceptance model; Information Communication Technology; ICT Usage, Public organization; structural equation modelling; Saudi Arabia and developing countries.

ملخص البحث

زاد التطور الأخير في تقنيه المعلومات والاتصالات من الحاجة إلى مزيد من الدراسات في هذا المجال. هناك خطر حقيقي من قبول تقنيه المعلومات والاتصالات من بعض الموظفين وليس الكل مما يسهم في رفض أستخدام هذه الأداه المهمه.إن هذه الدراسة تهدف الى معرفه معوقات قبول تقنيه المعومات والاتصالات من خلال دراسة استخدام تقنيه المعلومات والاتصالات والخدمات الإلكترونية في البيئة الحكوميه من خلال فحص متغيرات الإطار النظري لنموذج قبول التقنيه (TAM). كذلك أستخدمت الدراسة الفروق الفرديه من نموذج استعداد المنظمة للتغيير (MORC) كمتغيرات خارجية، بالإضافة الى المعيار شخصي والدافع التطوعي كوسائط. و تم اختيار الاستخدام الحالي للتقنيه كوسيط بين متغيرات تقنيه المعلومات والاتصالات و موقف الموظف من التغيير.
أجريت معظم الدراسات السابقه في تقنيه المعلومات والاتصالات في القطاع الخاص في المملكة العربية السعودية. تم إستخدام الأستبيان لجمع البيانات والذي أعتمد على إستبيان قبول التقنيه المستخدم بواسطه ديفيز وفينكاتيش عام (١٩٨٩). عينه البحث هم الموظفون السعوديين في المؤسسات العامة و الحكوميه. أداة البحث هي المعادلة الهيكلة النموذجية (SEM)، والذي تتطلب حد الادنى من عينة الاستطلاع قدره ٢٠٠. هذه الدراسة أسهمت في توسيع مجال بحوث قبول تقنيه المعلومات و الاتصالات. وجدت الدراسة ان نموذج قبول التقنيه (TAM) قابل للتطبيق في البيئة العامة السعودية، و أن دعم القيادة والنقص في التدريب هي عقبات في تطبيق الحكومة الإلكترونية. كشفت نتائج تحليل المعادلة الهيكلة النموذجية من أن الاستخدام الحالي ليس له أي تأثيرعلى العلاقه بين متغيرات تقنيه المعلومات و موقف الموظف من التغيير. أخيرا إن هذه النتائج ضمنت مقترحات مهمه للنظرية والممارسة.

APPROVAL PAGE

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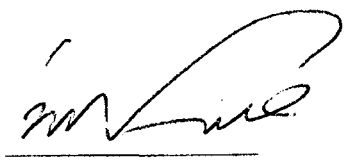

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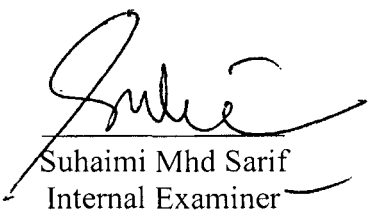

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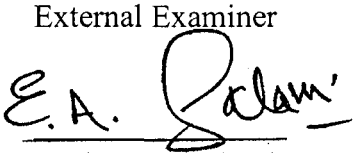

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DECLARATION

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

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FACTORS AFFECTING INFORMATION COMMUNICATION TECHNOLOGY ACCEPTANCE AND USAGE OF PUBLIC ORGANIZATIONS IN SAUDI ARABIA

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CHAPTER ONE

INTRODUCTION

> **"Many leading organizations tumble from the peak of success to the bottom of failure when the surroundings changes; because they cannot follow the stream. To the contrary, they engage in too much action; action of the incorrect kind. Suffering from active inertia, they trapped in their attempt and true activities, even in the face of dramatic shifts in the environment. Instead of digging themselves out of the hole, they dig themselves in deeper. Such companies are victims of their own success: they have been so successful; they assume they have found the winning formulas. But these same formulas become rigid and no longer work when the market changes significantly".**
>
> Harvard Business Review (Sull, 1999, 1)

The world is electrified! Besides the pressure dealing with the normal operational problems, organizations have to navigate change after change in a shifting global economy. Leaders have to create the time to explore all the options available to them so that they can advance their organizations electronically. It is now a hyperactive world, and the most successful leaders will be those who tap into the wires and maximize the present for the benefits of their organizations.

According to Downing, Fasano, Friedl, McCullough, Mizrahi, and Shapiro (1991) Information Communication Technology [ICT] has introduced several social changes in the world that cannot and should not be overlooked by leaders whose job is

preparing people to function successfully within this new rapidly changing unpredicted economy. Such ICT is changing every day; therefore, the cost of keeping up with this change is very high (Krigsman, 2009). In addition, it is extremely hard to keep up with this change. The developing countries aim to take advantage of ICT in their strategic planning (AlSheha, 2007; Al-Soma, 2009).

Today, anything may have an **'e'** letter, e-business, e-literacy to e-government and e-transaction. The prefix **'e'** means manipulating data in digitized electronics form followed by the phrase of action. For example, e-government means electronic manipulating for control, and governing purposes (Tabatabaie and Monadi, 2006). By definition, e-business is using any type of network connection to remain in touch with clients, partners, and services provider (Morris, 2003). To engage in e-commerce means: "adopting new web-enabled business models auctioning off surplus goods, selling products directly to consumers, or joining in online purchasing cooperatives with their competitors.

Andersen (2006) defines e-government as "utilize of computer technology applications and web-based connection to provide services in the public sector". The World Bank [WB], (2010, Ol) spots the definition of e-government as "the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or

cost reductions". The technical definition of e-government is the use of technology to boost the access to, and delivery of, public service to benefit the citizen (Deloitte, 2000).

Dawes (2008) asserts the main e-government's objectives are electronic information exchange, electronic verification, electronic identification of citizens (chip cards), and electronic business's registration. In addition, e-government makes public bureau's more efficient, transparent, convenient, cost efficient, and/or increase income (Al-Soma, 2009; Brown, 2007; Morris, 2003). The e-government links the citizen, businesses, not for profit organization with the government bureaus (Rocheleau, 2007).

Recent developments in the field of public services have led to a renewed interest in the use of e-government. E-government plays a significant role in the public services industry. The developing countries sought to decrease government expenditure and improve government efficiency, by improving public service delivery through the use of e-government (DeBenedictis, Howell, Figueroa, and Boggs, 2002). The Saudi government launched the strategic management initiative that outlined the plan of delivering better government services to the public in 2004 (Al-Sabti, 2005). This is clearly underpinned by a sustained commitment to modernization throughout the public agencies. Today, the concept of modernization and change within the public service is identical with a wide range of managerial, organizational, technological, and legislative innovations, which have unfolded during the last decade (Kieran and McDonagh, 2006).

Massive advantages of e-government and information technology drive the developing countries, the gulf countries, and Saudi Arabia toward adoption of e-

government (Faisal, 2010). The e-government project requires contribution and total involvement of administrators, resources, and commitment among public, private, and non-profit sectors with the government (Faisal, 2010; Mofleh, 2008). Technical requirements and technology infrastructure are essential for potentially efficient e-government system (Oregon state e-government, 2006). Yet, total or partial failure confronts e-government and Information technology projects due to other un-technical factors (Heeks, 2003; Mofleh, 2008).

The unsuccessful story of information communication technology transfer in some developing countries had led to abandon this essential strategic factor. Several factors are behind the low technological adoption in the developing countries. These factors are (1) the human capital (Arrow, Chenery, Minhas and Solow, 1961; Scacco, 2009; Al Khalid, 2010; Al-Faisal, 2010), (2) resources and wealth (Press Release, 2008; Scacco, 2009; Pavela, 2010), (3) employee resistance and valance (Lanzendörfer, 1985; Haymes, 2008; Maru, 2009), (4) the country-specific culture, norms and society (Ruttan, 2008; Amin, Khushman and Todman, 2009; Owyang, 2009; UNESCO, 2009; Pavela, 2010) and (5) leadership and management support (DeBenedictis *et al.*, 2002; Scacco, 2009).

Information technology is dependent upon technology, in fact, without technology; there is no **"e"** in organization. The factors that impact information technology are both internal and external, just as they are with a traditional business. However, there are certain risk factors associated with information technology that may be different (Lunenburg, 2010). Organizations adapt to the external forces, or they try to find a way to change those forces (Lunenburg, 2010).

1.1 E-GOVERNMENT IS ICT APPLICATION

E-Government is one of ICT applications; it is a standalone system for delivering services and provides information exchange between the three stakeholders mentioned by DeBenedictis:

i. Government with Citizens [G2G] there is a possibility that the majority of e-government applications as well as the services fall under the G2C category, which concentrates on offering society with comprehensive and wide-ranging electronic services in order to meet the individuals' routine concerns (Australian government information management office, [AGIMO] 2007; WB, 2010).

ii. Government with Business [G2B] the production, industrial, and commerce organizations have transactions with the government; the second application of e-government, for example being: renewing registrations, updating information, and many others (AGIMO, 2007; WB, 2010).

iii. Government with Government [G2G] many government operations and transactions require association between different departments, for example; business registration forms require approval from several state agencies (AGIMO, 2007; WB, 2010).

1.2 THE INTERNET IN SAUDI ARABIA

In January 1999, the Saudi public was granted access to the World Wide Web [WWW] through local internet service providers. It did so while filtering and blocking the flow of "unwanted" data online. The local governments, academic institutes, and medical centres granted access to the internet, whoever residents of Saudi Arabia could connect through foreigner internet services provider [ISP] (Communications and Information Technology Commission [CIT], 2007).

In November 1999, the government approved applications from some companies allowing local private internet service providers. However, King Abdul-Aziz City for Science and Technology [KACST] is Saudi Arabia only gateway to the World Wide Web [WWW]; this allows the government to control and limit the data flow and internet surf (CIT, 2007).

1.2.1 E-government Program in Saudi Arabia [YESSER]

The Arabic meaning for "YESSER" is simplified "facilitate", YESSER is the Arabic name of Saudi Arabia's e-government scheme (YESSER, 2006). Kostopoulos (2007) said an initial e-services attempt was between Ministry of Hajj and other Umra and Hajj expedition operators. Since the early 2001, the government in Saudi Arabia has taken a number of key initiatives. The objectives of Saudi development plans are to ensure that government agencies' efficiency meet the financial and every day needs of Saudi citizens.

The framework of the action plan, based on a detailed strategic vision of e-government that includes policies for establishing e-government projects have been approved at the end of 2001. In March 2003, the Ministry of Finance and Monetary under the royal directive of the Saudi King allocated the entire necessary fund for the

launching of the e-government (Bawazir, 2006). The Saudi Arabian government spent two years building a centralized control system before it was introduced to public service in February 2004.

1.3 ADVANTAGES OF E-GOVERNMENT

AGIMO illustrates the best e-services are to build structures that are intended to meet people needs and life situations rather than construct the governments' agencies online. Government agencies must be free from the agencies' boundaries, and follow citizens' current events, so they can maximize their production (AGIMO, 2007). In the convenience of e-government, the relations between a citizen and business with public agencies took place in service's centres closer to the public, kiosks in the agency, service's kiosk near the public, or a computer in home or office (Bolívar, Pérez and Hernández, 2007; Al Khalid, 2010).

1.3.1 Government Agencies Benefit

The amount of data exchange going on between government organizations is massive, and the operating cost linked with that is very high. However, e-government can cut the expenditure dramatically. A study conducted by the AGIMO in 2006, affirms that cost-effective solutions achieved with e-government (Australian National Audit Office, 2008; Al-Soma, 2009). A study done by AGIMO reveals the overall estimated reductions in costs from the use of e-government were about one hundred million Australian dollars from the investigated programs. Using e-government tools will definitely have a significant impact on expenditure efficiency. In addition, the e-government will provide efficient services to individuals, businesses and government organizations (DeBenedictis *et al.*, 2002; AGIMO, 2007).

1.3.2 Individual Benefits

Time is very important and significant to people these days, "how long" concept is more critical to people than quality or "how good" particularly. The time dimension is a decisive element of e-government adoption. Citizens can use government services through agency websites twenty-four hours a day for seven days a week, not just when a particular government agency is operational (O'Neill, 2000; Al Khalid, 2010). Moreover, services can be provided as self-serve, a final point, people in the rural communities can also access government services, which expand the government service's coverage (DeBenedictis *et al.,* 2002; Oregon State e-government, 2006; Al-Soma, 2009).

1.3.3 International Trade Benefits

World trade organization [WTO] sets certain rules for its members which must be fulfilled to join the organization. One of them is the e-government readiness matter. Saudi Arabia ranked fifty-seventh of out one hundred ninety one of the United Nations' member as stated in the United Nations' Global E-government readiness report 2010 (DeBenedictis *et al.,* 2002; United Nations [UN], 2010).

1.4 CHALLENGES FACING E-SERVICES IN SAUDI ARABIA

Aljifri, Collins and Pons (2003) stated several factors associated with the failure of ICT acceptance and adoption in developing countries: (1) Information Security