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The Influence of Societal Culture on the Adoption of Information Systems: The Case of Libya

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ABSTRACT

This study is part of a larger study that explores societal and organizational culture factors that influence the adoption of information systems (IS) in Libya's Oil and Banking sectors (Twati & Gammack, 2004; 2006). Using a structured survey questionnaire based on the work of Geert Hofstede's Value Survey Module (VSM 94), 400 questionnaires were administrated to middle and top management employees in more than 15 government and public organizations in the two named industry sectors. The findings showed that there is a direct positive relationship between Hofstede's (1980) societal culture dimensions and the adoption of IS. The findings also showed that there are no differences in the societal culture dimensions between the two sectors covered in this study. This implies that the adoption of IS is influenced by societal culture and other factors, which are worthy of investigating. The future implications of this research are also discussed.

BACKGROUND

The late 1990's and early 2000's is the "information technology era". We have witnessed massive acquisitions of information systems by organizations throughout the world (Cooper & Zmud, 1990; Yavas, Luqman & Quraeshi, 1992, Al-Gahtani, 2003; Zain, Rose, Abdullah & Masrom, 2004; Al-Ashban & Burney, 2001). Many organizations are converting to new modern technology to gain competitive advantages (Caldeira & Ward, 2002). Organizations routinely allocate significant sums of money to adopt, implement, manage, and integrate information with organisational activities to provide better products and/or services, and governments have also allocated billions of dollars to build infrastructures to support the reliable transfer and efficient management of information (The Tech Wizard, 1999). Adopting any technology, in particular an information or communications technology, tends to change the associated work practices, and often necessitates a redesign of the human activity systems in which the technology is embedded: the organisation's information system (IS). Thus IS and IT adoption cannot be separated and the developed world has recognised the importance of IS/IT in obtaining its success and economic strength.

Societies and organisations worldwide go through difficulty and even failure in information technology transfer (ITT), defined as the transfer of information technology from originator, developer or inventor to client or user (Cunningham & Srayrah, 1994). This transference of systems, whether they are developed internally or purchased in the commercial software/hardware marketplace, is plagued with problems (Al-Mashari & Zairi, 2000; Khalfan & Alshawaf, 2004).

Although developing countries are eager to adopt new information systems technologies, the process of adoption has been slow and the current use of IS is far less than that achieved in developed countries (Danowitz, Nassef & Goodman, 1995). This disparity in IS use between developed and developing countries can be explained in part by the high cost of building and implementing IS, but this explanation is not satisfactory. Substantial undependable and descriptive evidence exists for failures in cases where financial barriers have been overcome (Arab Net, 2002). While finances were not a problem for the wealthy country of Libya, it have historically used far less than its available computing capacity (Ghnia, Iles & Li-Hua, 2004; The Tech Wizard, 1999).

The use of technology in Libya is minimal, regardless of it being one of the wealthiest countries in Africa. After the discovery of oil in 1959, Libya transformed from a poor nation to a rich one, recording the 9th highest oil reserves of any country in Africa and ranking 19th among all petroleum producing countries in 2004 (Arab Net, 2002). The Libyan economy depends mainly on the revenues from the oil sector, which make up nearly all of its export earnings. These oil revenues, along with a small population, give Libya one of the highest per capita GDP's in Africa. The non-oil sectors (manufacturing and construction), have expanded to include petrochemical, iron, steel, and aluminum products. Agricultural output is limited by the climate and soil, and Libya still imports about 75% of its food (East-West Debt, 2004).

This paper investigates the impact of societal culture on the adoption of IS in a society that has not yet taken the steps for new modern IS/IT. The next section will give an overview of technology levels in Libya in general and will examine three different organizations that are immediately in need for IS adoption in Libya: The Telecommunication Company, which plays the most vital role for the IS/IT technology adoption; the Banking sector; and the Oil and Gas sector. Societal culture and IS adoption is then defined. The readiness of the Libyan organizations for adopting and implementing IS is then addressed, followed by the research methodology in section 5, with the results and discussion following in section 6. The conclusion and future implications are presented in the final section.

OVERVIEW OF TECHNOLOGY LEVEL IN LIBYA

Literature on Libya's level of technology adoption is scarce and generalized, providing broad historical and political information. Historical literature was found on various Libyan organizations, but was not enough to benefit this study. Internet sources as of mid 2005 were also unhelpful, for providing relevant technology adoption information about Libya. This research, therefore, depends largely on the survey study and the experience of the author.

It is increasingly widely accepted that it is important for organizations to encourage and support IS innovations and to adopt Internet technologies. IS such as e-commerce technologies includes "searching for products, services and information, advertising, and the buying, selling and paying for products and/or services" (van Akkeren & Cavaye, 1999). Management Information Systems (MIS), such as accounting information systems, human resources information systems, enterprise systems, and enterprise-wide information systems assist in producing reports for decision making (Laudon & Laudon, 2002). This is particularly important for most organizations in different industry sectors in Libya. It improves the capability of organizations to communicate and compete with larger organizations worldwide. It also allow organizations to operate on an global level and provides a cost-effective way for organisations to identify potential business partners, gather information, improve communications, launch new products, and market their products and business (van Akkeren & Cavaye, 1999).

Internet markets in the Arab countries are in the early development stages. They have yet to experience the substantial subscriber increases that Western Europe encountered when their Internet service providers launched subscription-free services in 1998 (Internet World Stats, 2004). This is to some degree due to the relative lack of adequate infrastructures in the region and low levels of competition. These factors are largely influenced by the negative attitudes toward the Internet by regional governments. Because the Arab governments dictate the rate and type of economic progress in their countries, the benefits of the Internet being recognized across the entire region is substantial. Despite the culturally embedded attitudes against the Internet, the World Market Research Centre reported that the UAE, the regional leader, had a penetration rate of almost 30% in 2001, which is higher than some European countries (Norton, 2002).

Internet services in Libya are in the early growth stages. Libya has one of the lowest penetration rates and one of the lowest percentages of Internet users in the Arab region (Internet World Stats, 2004). Table 1 shows a sample of the countries in the Arab region, their estimated populations, the number of Internet users in 2004, the percentage of growth in Internet usage between 2000-2004, the percentage of the population penetration and the total percentage of users in the country. Libya clearly has the lowest penetration and user rate in the region. However, Libya's growth rate of 1,500% in Internet use is high compared to other countries in the region. This indicates a change in the country's development of, and dependence upon, the Internet and its technology infrastructure, which would influence the overall adoption and innovations of IS.

For the technology to be widely used and accepted in a society, good telecommunication systems are essential, because without it the technology innovation would not occur or be effective.

Table 1: Internet Usage in Selected Arab Countries (Source (Internet World Stats, 2004).

Internet Usage Statistics for Selected Countries in the Arab Region					
Country	Population 2004 Est.	Internet Users, 2000	Internet Users 2004	Use Growth (2000-2004)	% Population (Penetration)	% of users
Kuwait	2.04 M	150,000	567,000	278%	27.7%	3.4%
Libya	*7.52 M*	*10,000*	*160,000*	*1,500%*	*2.1%*	*1.3%*
Oman	3.23 M	90,000	180,000	100%	5.6%	1.1%
Saudi Arabia	23.33 M	200,000	1,500,000	650%	6.4%	8.9%
UAE	3.34 M	735,000	1,110,200	51%	33.2%	6.6%

Technology Level in the Tele Communication Sector

Modern telecommunications systems are an essential element for Libya to be able to adopt and use the technology. Without suitable telecommunications system and good networks, the innovation of IS/IT would be very difficult to achieve. Libya has one company for telecommunications services. The General Post and Telecommunication Company (GPTC), the only telecommunication company in Libya, is the national operator and regulator for all telecommunications services, and being a government department has no administrative and financial independence (Network Wizards, 2004). Libya is rated low in the number of telephone lines compared to other countries in the region such as UAE. Table 2 shows that Libya has nearly 9.9% of the total telephone lines in the region. The number of connected telephone lines was approximately 750,000 in 2003.

The telecommunication network in Libya had a capacity of 400,000 lines in 1995. In 1996, the number of connected telephone lines was approximately 380,000, resulting in a telephone density of 6.79% per hundred people (Network Wizards, 2004). Mobile cellular telephone systems became operational in 1996 with limited access and coverage. Until recently these services covered only certain areas of Libya and the country is not widely networked for this service. In 1997, the Libyan Telecom Technology (LTT) was the first Libyan company to work in the field of communication and information technology. LTT is involved in making scientific studies to develop projects in the field of communications and IT. These studies cover areas such as the use of the Internet, which was introduced in 1999 with less than 1000 users, most being government organizations. The telecommunications system is being modernized since the launch of LTT, and LTT now offers high quality services to people in most parts of Libya.

Table 2: Telephone lines in Selected Arab Countries (Source: Rashid, Sambasivan, & Rahman, 2004).

Internet Usage Statistics for Selected Countries in the Arab Region			
Country	Population 2004 Est.	Telephone lines 2003	% Of lines with population
Kuwait	2.04 M	486,000	23.8%
Libya	*7.52 M*	*750,000*	*9.9%*
Oman	3.23 M	233,900	7.2%
Saudi Arabia	23.33 M	3,200,000	13.7%
UAE	3.34 M	1,350,000	40.4%

Technology Level in the Banking Sector

The development of reliable public banking facilities is essential for Libya's economic reform. Amongst the Arab nations, Libya has a reputation for having "the finest bankers but the worst banks" (Libyan Investment, 2004). In the 1950's and 60's, Libyan bankers learned from UK, US, and Italian bankers, that had successful banking operations in Libya. Libyans also were involved with the creation of some of the leading Arab financial institutions following the 1970's oil boom (Libyan Investment, 2004).

Technology is central to competitiveness in modern banking business, lowering functional costs and enabling efficiency improvements (Technology Awards, 2004). Many banks worldwide are highly successful at using IT to provide efficient banking services to their customers. On the other hand, the Libyan banking systems is still using the manual system of banking and the technology has not yet found its way to the banking sector. The banks are still dealing with customers in an inefficient manual way. Basic transactions are available to customers such as accounts balances or simple payroll systems. There is no any kind of networking between the bank and its branches. Customers have to wait in lines to cash a cheque from their accounts and they have to use chequebook, which is not used except when cashing money from their bank accounts.

Recently, to keep up with the rest of the world, Libya is trying to introduce the SWIFT system of transferring money through the use of the technology worldwide and this can be done only by the use of the modern technology and a good communication systems. Also, introducing the private banking ownership to promote the use of the efficiency services to customers and for the banks to be as competitive as possible and bring foreign investors to develop the banking system. The expansion of ownership transfer program of privatisation will include the banking sector and aims to develop economic performance to increase income and level of individual's living standard (Libyan Investment, 2004).

Technology Level in the Oil and Gas Sector

Libya's Oil and Gas industry is run by the state-owned National Oil Corporation (NOC), along with smaller subsidiary companies, which combined, account for around half of the country's oil output. Of NOC's subsidiaries, the largest oil producers include Berega Oil Company, Ras Lanouf, Waha Oil Company, Zueitina OIL Company, Sirt Oil Company, which are considered public sector companies. Several international oil companies are engaged in exploration/production agreements with NOC such as VIBA, Oasis, Conoco, Marathon, and Amarada Hess (Anonymous, 2002; Feld, 2004).

The Oil and Gas sector in Libya is divided into three sub-sectors. The government sector, which is operated by the National Oil Corporation (NOC), the public sector, which is operated by companies owned by NOC, and the private sector, which operates on the basis of partnership with foreign international companies. Technology innovation differences can be seen clearly in the use of the computer technology in these three different sectors.

International oil exploring/production companies introduced computers during the early 1960's. Initially, computers were used for processing financial transactions and gradually other systems were developed to encompass all other activities. Currently, some public organizations like Zueitina Oil Company have several on-line systems that are working under databases. PCs in those companies are widely used in all locations of the companies. With this in mind, those companies have a nurtured a computer culture that extended for over three decades. Zueitina Company has more than 120 on-line mainframe users distributed across the company, and several client server applications connected to a WAN. The use of computers in those companies is essential to the daily work of most of their employees in different departments. However, American and United Nations sanctions have severely restricted investment in Libya's oil and technology industry over the last 18 years. As a consequence, these industries are now in extreme need of new technology, management techniques, and equipment to build their infrastructure.

SOCIETAL CULTURE AND IS ADOPTION

Definitions and analyses of the culture concept have been numerous since at least 1952 when Kroeber and Kluckhohn (1952) reported the presence of more than 164 definitions. Definitions vary from the general to the specific, depending on the discipline and the level of analysis. Societal culture can be defined as the values, attitudes, beliefs, and behaviours that are shared by the vast majority of people in a group or nation. Culture consists of some mixture of artefacts or practices, values and beliefs and hidden assumptions that members of a society have in common about appropriate behaviour (Hofstede, 1980; Schein, 1992; Schwartz & Davis, 1981). As such, societal culture refers to a set of shared values, belief, assumptions, and practices that shape and guide members' attitudes and behaviour in the society (Hofstede, 1991). Hofstede (2001) defines culture "as the collective programming of the mind that distinguishes the members of one group or category of people from another" (p 9).

The relationship between culture and the adoption and diffusion of IT in general, and IS in particular, has been suggested, but no specific investigation of this relationship has been conducted on a cross-national or cross-

boundaries basis (Bagchi, Cerveny, & Hart, 2001). The literature in the field of IS clearly indicates that culture is an important moderating variable for the success or failure of IS adoption. Literature also points to several key research studies, which support the notion that societal culture has an influence on IS adoption. In a survey of global IT research, Gallupe et al. (1999) found that a wide variety of IS/IT issues have been studied from a societal culture perspective. Tan et al. (1998) determined that there has not been much global research focusing on the cross-cultural issues of IS adoption, yet culture has been isolated as an important variable on IS adoption. However, it is clear that an IS adopted successfully in one culture, nation, or region, may be a disastrous failure in another (Al-Mashari & Zairi, 2000). Thus, adopting an IS that has been invented and developed in one culture, country, or region to another diverse culture involves more than simply providing information on the technical features of adopting the software. Societal culture is commonly viewed as a moderating factor in accepting and adopting IS (Abdul Rashid et al., 2004; Davison, 1996, 2002; Fey & Denison, 2003; Frotaine & Richardson, 2003).

Numerous studies report the most frequent reason given for the failure of planned adoption of IS and organizational change was due to a neglect of culture. Up to 75% of the reengineering, total quality management, strategic planning, adoption of technology, and downsizing efforts has failed or created problems affecting the survival of the organisation (Cameron & Quinn, 1999). Culture is a key to the success of IS adoption and effective leadership is the means by which the culture is created and managed. Understanding culture is a vital activity for top management executives because it affects strategic development, productivity, and learning at all levels of management (Schneider, 2002).

LIBYAN ORGANIZATIONS READINESS FOR IS/IT ADOPTION

There are many issue to consider when adopting IS, lack of organizational readiness for adoption; inadequate support for the needed change; lack of alignment with strategic change; inadequate support and user involvement; and unrealistic expectations. Stewart et al. (Stewart, Milford, Jewels, Hunter, & Hunter, 2000) argue that IS adoption is fundamentally an agent for organizational change, and this change requires effective leadership practice and technical skills.

The Libyan organizations' readiness for adoption of IS involves many aspects of the organizations in the country and the type of leadership in the organization. The adoption of IS is an important interference in an organization's life. It influences and is influenced by many variables in societal and organizational culture, decision making by top management, strategies of the organizations, and risk taking orientations (Stewart et al., 2000). In Libya, there are at least two sources of conflict in the IS industry for adopting and implanting IS. Firstly, between the old and new generations, and secondly between the economic necessity for the implementation of IS and the fear of what it might brings. The Libyan employees are consisting of well-established but aging employees who have not been up to date with the technology of the IS. Also, there are small IS firms with technology, maintained by staff trained mainly overseas in the 1980's and 1990's, which have new enthusiastic people that are keeping up with latest developments in the technology. The former are employees in the public sectors who work in traditional, established organizations such as the banks and government sector. The latter are employees of entrepreneurial companies catering for small business or private organizations.

Hasan et al. (1999) indicated that most studies on the adoption of IS in developing countries fail to distinguish IS characteristics from the technologies. They argue that, while there are some problems caused by unacceptable IS transfer to developing countries, little is known about the cultural influence on the IS adoption and implementation. However, on a positive note, they did observe successful IS adoption in many of the developing countries. This shows that there is potential for wide economic and social benefits from the careful adoption and use of IS in developing countries. Danowitz et al. (1995) note that there are lower levels of IS use in the Middle East than might be expected, especially in comparison with other developing parts of the world such as Eastern Europe.

There are few software projects being started in Libya, including some with in-house systems, which fits the internal needs of organizations. Educational systems have introduced some courses at the undergraduate and the graduate levels to help build up the human infrastructure of the IT/IS. This is a positive sign of realizing the importance of IS for the organizations in the country. IS adoption in Libya at this stage has not been fully researched. It is still far beyond many of the undeveloped countries in the region. Libya is not yet ready to accept IS because of a lack of infrastructure. Top management executives are not keen to be involved in adopting IS projects due to the lack of

education, skills, and avoiding anything which is new and uncertain. On the other hand, the new generations are keen for change to the new technology. The introduction of the Internet and new education systems make it easier for organizations to adapt to change in the near future. The level of experience of people to the technology is higher than a decade ago. The future of the technology looks encouraging and bright.

RESEARCH METHODOLOGY

Sample and Data Collection

Top and middle management executives of organizations in a sample population were the aim of this study. A total of 9 organizations in the Oil and Gas industry sector of which 3 are government and 6 are public organizations and in the banking sector a total of 6 public organizations participated within this study. Data was gathered from CEOs, MIS department managers, and other relevant senior, middle, and lower levels of management in each of the chosen organizations in the government, public, and private sectors. A total of 400 questionnaires were distributed and a total of 317 (164 from oil and Gas and 153 from Banking) completed questionnaires were returned with rate of return of 79.3% and 262 of these surveys were suitable for data analysis.

All participants were Libyan natives holding a middle or top management position in their organization. A total of 56.5% of the participants were from the oil and gas sector (of which 61.5% of the government and 38.5% of the public), and 43.5% from the banking sector. In the sample, nearly 22.1% of the total respondents were female. In terms of age, 9.9% of the participants were between 21-30 years old, 26.3% were between 31-40 years old, 38.5% were in the age group 41-50 years of age, and 25.2% were over 50 years of age. The educational background, nearly 86.5% of the participants from the Oil and Gas sector have a university or post graduate studies and less than 50% of the banking sector hold university or post graduate degrees. Overall nearly 75.6% of the sample's education degrees are held in areas not related to IT. Both industry sectors are considered large organizations with more than 1500 employees.

Instrument

Due to the lack of validated and reliable instrument in Arabic language for assessing the influence of societal culture on the adoption of IS, the current study translated widely-cited and used Western-developed instrument, which have been validated and found to be reliable. Hofstede's Value Survey Module (VSM 94) was adopted and used to gather and analyze data for the purpose of the present study. Relevant questions to the present study were identified from the module addressing political and social perspectives, and those deemed inappropriate to the sample were omitted. The VSM 94 was used to assess how Libyan top management executives value and perceive technology in general and IS in particular from social perspective and if social influence plays a mediating role in IS adoption.

Hofstede (1980) developed four dimensions of societal culture and provided a research instrument to measure them empirically. The dimensions are *Power Distance (PD)* the extent to which the less powerful members of society accept that power is distributed unequally. *Uncertainty Avoidance (UA)* refers to the extent to which people feel threatened by uncertainty and ambiguity and try to avoid these situations. *Individualism versus Collectivism (IDV)***:** in individualism people look after themselves and their immediate family only vs. collectivism where people belong to in-groups (families, clans or organizations) who look after them in exchange for loyalty. *Masculinity versus Femininity (MAS)***:** the dominant values of masculinity are achievement and success vs. those of femininity is caring for others and quality of life. The 16 items from Hofstede's VSM 94 included four items that allow the scores to be calculated on the four dimensions, on the basis of four questions from each of Hofstede's above-mentioned dimensions.

Analysis

The statistical Package SPSS was used for the descriptive statistics, which included frequencies and percentages to present the main characteristics of the sample and the profile of societal culture. The data collected using the VSM 94 survey was used to calculate the four above-mentioned dimensions of societal culture for this study based on Hofstede's formulae. The formulae for these calculations are based on the mean scores of responses of the sample multiplied by constant numbers as provided and specified by Hofstede in VSM 94 (Hofstede, 1994). In addition a

direct binary logistic regression was performed to assess the direct relationships between the independent variable societal culture using Hofstede's four societal culture dimensions of PD, UA, MAS, and IDV with the dependent variable of IS adoption.

RESULTS AND DISCUSSION

The aggregate results of the four cultural dimensions are presented in Table 3. In addition to the present study, other results reported by Hofstede for Arab countries, USA, Norway, and Singapore are also presented for comparison. Hofstede's four dimensions of societal culture generated the following results. Surprisingly, in an era of technology, globalization, and the internet, Libyan results were similar to Hofstede's (1980) index. While many countries' indexes worldwide have changed since Hofstede's predictions of the 1970s Libyan results still representing Hofstede's results of the 1970s. Numerous countries in the region including some of the Arab countries are different now of what Hofstede had predicted.

Power Distance

Literature suggested that higher power distance would influence the adoption of IS negatively. This study revealed that Libya is high (i.e. above 50) on the power distance dimension: specifically, Libya was 72. Hofstede's (1980) index rating for a group of Arab countries during the 1970s was 67 and the world average was 55. Researchers such as Phan et al. (2002), Png et al. (2001) points to cultures with high power distance as less enthusiastic to adopt IS. The results for Libya supported this. This was attributed to factors such as lack of IS infrastructure, the low education levels of decision makers, lack of government support for IS innovation and adoption, lack of expertise in the field, the role of senior management executives, age of employees.

Uncertainty Avoidance

Libya is rated high on uncertainty avoidance. Libya's index of uncertainty avoidance was 71. Hofstede's index of the Arab countries was 68, with the world average being 64. The literature suggested that higher uncertainty avoidance would influence the adoption of IS negatively, and thus Libya was expected to be lower in IS adoption. Although literature rating the Arab Gulf region is also high on uncertainty avoidance, but there exists an extensive IS adoption. The low adoption rate in Libya may be attributed to factors such as the influence of top aging senior management executives with no technical background, Libyan people's nature are not risk takers or entrepreneurs, and low education level showing the competitive advantages of IS adoption.

Masculinity vs. Femininity

The technology literature suggests IT has been male-dominated, with a focus on technology for its own sake (Gefen & Straub, 1997; Kankanhalli, Tan, Wei, & Holmes, 2004). In other words, a masculine culture would find it easier to accept and adopt IS software. According to Hofstede's original indexes analysis, the Arab countries are above average on the masculinity dimension. In this study Libya was rated slightly lower than average on this dimension, which means Libya is more feminine culture than masculine culture. A feminine culture attitude is people-oriented and focuses on the end-user of IS. This region is known for its less occupational segregation by gender with more women holding qualifications and having better-paid jobs (feminine culture).

Individualism vs. Collectivism

With an index score of 18 or high collectivist culture, Libya is characterized by its organizational commitment to members' well-being and loyalty. Lower adoption in Libya is consistent with the literature's suggestion of lesser enthusiasm about IS adoption in a collectivist culture (Kankanhalli, et al., 2004).

Table 3: Scores on Hofstede's Societal culture Dimensions.

STUDY/COUNTRY	POWER DISTANCE	UNCERTAINTY AVOIDANCE	MASCULINITY	INDIVIDUALISM
Present Study	72	71	45	18
Hofstede's Arab World's Index	80	68	53	38
USA	40	46	62	91
Norway	31	50	8	69
Singapore	74	8	48	20

CONCLUSION AND FUTURE IMPLICATIONS

This study provided insight into Hofstede's four original cultural dimensions applied to Libya as reported by 317 Libyan citizens. The study has examined the societal culture of the Oil and Gas and Banking sectors in Libya. This are two major well resourced sectors of major economic importance, but with relatively low levels of IT/IS adoption, not attributable to affordability. Literature has suggested the importance of societal culture variables on IS/IT adoption and identifying the presence and relevance of these was indicated, using the (VSM 94). These sectors span a range from government owned, through public, to private models of ownership and governance, and, with possibly associated attitudes to technology adoption and innovation thus might indicate different societal cultural values, beliefs, and attitudes conducive to IS adoption. While it might be expected that there would exist some variation in the societal cultures of the two industry sectors. The Oil and Gas sector and due to the level of education and their contacts with foreign organizations through joint associations was expected to have slightly different societal culture that the banking sector, the results showed that they shared the same societal culture. This implies that there are other factors influential to the adoption of IS in Libya, which are beyond the scope of societal culture alone. Differences in adoption when finance, societal, and organizational culture are not determining factors must be explained by other variables, or if adoption has partially occurred in specific cases despite the dominant culture, this suggests a source of data for detailed examination.

The investigation was practically motivated by the author concern that if Libya does not take steps to adopt IS technology in the near future its economic development and organizational competitiveness will be substantially hindered. Organizations in Libya will therefore lack the necessary advantages that IT/IS provides for being competitive in the global marketplace. Understanding the causes of resistance to IS/IT adoption thus implies practical policy implications.

Further investigation in more organizations in different industry sectors, cities, and parts in Libya may provide more insights into the influence that societal culture has on the adoption and innovation of IS. There may be workplace or business unit subcultures that are viable within the larger organizational and societal culture, but which have characteristics and values conducive to change and innovation. Future research is needed into the role of societal culture, which may influence the organizational culture in Libyan organizations as a governing variable, and which is known to be resistant to radical change. Such investigation could also expand the research to other Arab countries in the region that have adopted and implemented IS successfully, despite similarities of culture and its major indicators such as language and religion. These studies could also benefit from exploratory investigations into the variations that exist within the different societal cultures of the region. These are being examined in our ongoing research.

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