



E-Business Driving Forces as Mediated by Cultural Characteristics in the SMES in Saudi Arabia

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Small and Medium-sized Enterprise (SME) witnessed a true revolution across the country and it played a critical role in the economic arena. However, e-business with the huge IT revolution and rapid change in culture in Saudi Arabia has become more important. The main purpose of this paper is to investigate the e-business driving forces and the mediating impact of cultural characteristics in the SMEs in Saudi Arabia. Data was collected through questionnaires from SME companies in Saudi Arabia. SmartPLS was used to analyse the research data and to test the hypotheses. Findings prove that organisational, technological and financial capabilities can be driving forces for E-business application in a different way.

Key words: *E-Business, SMEs, cultural characteristics, e-business driving forces.*

JEL Classifications: M10; M15

1. Introduction

The huge revolution of communication and information technology has a significant impact on business and it caused a dramatic change in the business environment. In addition, the Internet and social media tools have become an important alternative distribution channel for goods and services which forced companies to adapt to radical changes (Maditinos et al., 2013). However, E-commerce has added a higher value to businesses and consumers around the world. Accordingly, E-business is defined as the technique or set of processes of conducting business by using of the E-commerce tools and communication ability (Hertwig, 2012; Dubelaar et al., 2005). It is a procedure to connect all parties together including buyers, retailers, suppliers, and customers on one hand and achieve the organisation's goals on the other hand (Lai et al., 2013). Moreover,



effective use of such E-business and their applications can improve customer satisfaction which ultimately leads to organisational success. Lots of other benefits for application of E-business have been cited in the literature including: improved quality, cost reduction, increasing the speed of services, improved operation efficiency, informed decisions and more effective information flow (Ash and Burn, 2003; Bordonaba-Juste et al., 2012). E-business could help management with their needs of valuable information that are timely, relevant, verifiable, and accurate to enable them to make better decisions (Al-adaileh, 2008).

However, gaining of such significant benefits depends on several contextual and external factors that might hinder or support the achievement of these benefits. These factors might include organisational and society culture, IT infrastructure, IT skills, management support, and the user's perception of the usefulness of E-business applications. Accordingly, this study seeks to explore the potential impact of organisational capabilities, technological capabilities and financial capabilities as e-business driving forces with mediated impact of cultural characteristics within the context of Saudi SMEs. To sum up, the main goal of this research is to address and explore this issue in a systematic research process that aims to answer the following main question:

What are the E-business driving forces as mediated by cultural characteristics in the SMEs in Saudi Arabia?

Aim and Objectives

The main aim of this study is to investigate E-business driving forces and the mediating impact of cultural characteristics in the SMEs in Saudi Arabia. The study also seeks to achieve the following objectives:

- Providing an overview of the available literature relating to E-business.
- Building a new research model that includes the most important E-business driving forces in the SMEs in Saudi Arabia.
- Providing recommendations for decision makers based on the findings of the study.

Literature Review

E-business information is supposed to be always there to enhance formulation and implementation of business strategies. Organisations of varying fields are paying a lot of their attention and heavy investments to achieve this aim and to maximise the value of their IT investments and their potential role in enhancing organisational values. However, IBM in 1997, defined e-business as, “a secure, flexible and integrated an Investigation of the Barriers to E-business Implementation in

Small and Medium-sized Enterprises approach to delivering differentiated business value by combining the systems and processes that run core business operations with the simplicity and reach made possible by internet technology” (Charlesworth,2007). McKay & Marshall (2004) defined e-business as a business model that creatively and intelligently utilises and exploits the capabilities of IT and Internet technologies to create efficiencies, as well as to achieve effective gains such as flexibility and responsiveness, and to create strategic opportunities through competitive uses of IT to alter market and industry structure. All business applications and investments accordingly can be described as organisational solutions to challenges posed by the business environment.

In supporting this argument, Beheshti and Sangari, (2007), Al-Weshah et al. (2011) argued that E-business can be define as a mechanism that works to break down the barriers of distance and to allow businesses to move to more distant markets without having a physical presence. It also provides opportunity for SMEs to be more competitive and to do business in a global environment. Baker and Sinkula (2005) state that e-business has to be market oriented to succeed in creating and maintaining a competitive advantage. Therefore, the implementation of e-business has to be affected by many factors that were addressed in previous research including technological capabilities (Onetti et al.,2012; Lee and Kim, 2009); existing competition (Onetti et al., 2012; Yeh et al., 2012); innovation (Bello et al., 2004); security (Bhakoo and Chan, 2011; Meltzer, 2001); cultural characteristics and employee’s behaviour (Lai and Ong, 2010).

Furthermore, organisational facilities and capability become important factors in order to implement and apply E-business successfully (Pastoriza, 2008). However, the previous studies above were useful to provide better understanding of the research concerns. Nonetheless, the unique nature of this research context and its comprehensive nature might differentiate this particular research when considering the scarcity of similar studies in this context.

- **Research Hypothesis and Model**

- **H1: *Organisational Capabilities*** have a significant statistical impact on the Application of E- business as mediated by *openness to change*.
- **H2: *Organisational Capabilities*** have a significant statistical impact on the Application of E- business as mediated by *team-working*.
- **H3: *Technological Capabilities*** have a significant statistical impact on the Application of E- business as mediated by *openness to change*.

- **H4: Technological Capabilities** have a significant statistical impact on the Application of E- business as mediated by *team-working*.
- **H5: Financial Capabilities** have a significant statistical impact on the Application of E- business as mediated by *openness to change*.
- **H6: Financial Capabilities** have a significant statistical impact on the Application of E- business as mediated by *team-working*.

To test the above hypotheses, the following research model is proposed (Figure 1)

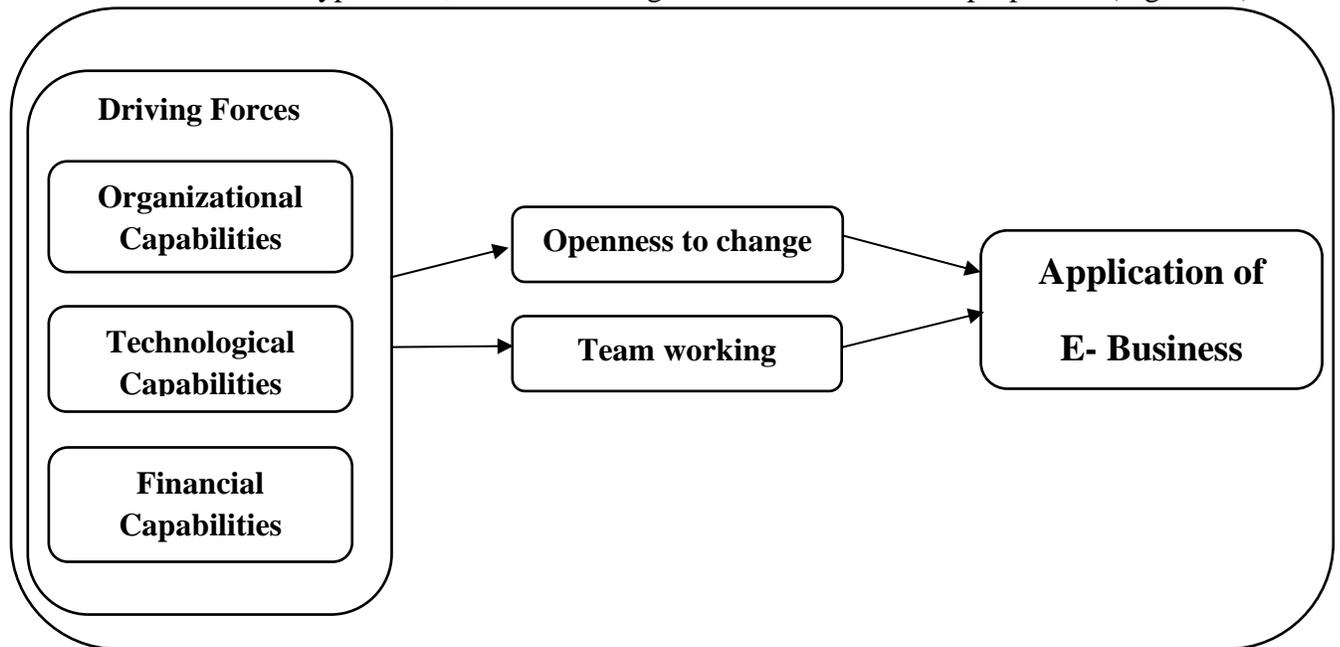


Figure (1): Research Model

Research Methodology

- **Data Collection Method and Sampling Framework**

Research methodology involves describing, explaining and predicting phenomena in addition to the research plan. It is necessary for the researcher to recognise the research and its contents to be able to identify the type of research. However, this research adopted a descriptive and analytical approach. A quantitative survey was used to collect the necessary data. The study population included all managers in the SMEs in Saudi Arabia. A convenient sampling technique was used to select the participants. 160 questionnaires were distributed. 140 questionnaires were analysed. Table (1) below outlines the sample characteristics.

Table (1): Sample characteristics

| Personal Information | | Frequency | Percent |
|----------------------|-------------------------|-----------|---------|
| Educational level | Diploma(college) degree | 35 | 25.0 |
| | Bachelor's degree | 85 | 61.0 |
| | Master degree | 13 | 9.0 |
| | PhD degree | 7 | 5.0 |
| Experience | Less than 5 years | 88 | 63.0 |
| | 11-15 years | 32 | 23.0 |
| | More than 15 | 20 | 14.0 |
| Total | | 140 | 100% |

- **Instrument Design**

The research was based on the questionnaire which was developed to achieve the research. Face validity and contents validity of the questionnaire were made. The answers were classified according to the five Likert scale. The questionnaire included two parts; the first part contained 2 items that related to personal information; the second part contained 24 items related to the research variables.

- **Data Analysis**

Partial least squares (PLS) was chosen for the current study using SmartPLS software. It was used in a two-stage approach, measurement and structural model testing.

- **Measurement model**

The measurement model can be assessed by examining the reliability, convergent validity and discriminant validity. Specifically, reliability which refers to the internal consistency of measurement, can be assessed by checking if the value of composite reliability (CR) is more than 0.7, the average variance extracted (AVE) is greater than 0.5 and Cronbach's α is greater than 0.6 (Hair et al., 2006). Table 2 shows that the CR values ranged from 0.80 to 0.94 and the AVE values ranged from 0.65 to 0.89. These values are higher than the acceptance value 0.70 and 0.50 which indicate a good construct reliability. Furthermore, in order to check the convergent validity, the loading factor for each item was calculated. All item loadings are larger than 0.6 and t values

indicate that all loadings are significant at 0.05 which indicates that the scale has a good convergent validity.

Table (2): Result of construct assessment

| Constructs | Items | Factor loading | Mean | SD | CR | Cronbach's α | AVE |
|------------------------------------|-------|----------------|-------|-------|-------|---------------------|-------|
| Application of E- Business | A1 | 0.743 | 0.773 | 4.565 | 0.851 | 0.891 | 0.661 |
| | A2 | 0.745 | 0.78 | 3.84 | | | |
| | A3 | 0.801 | 0.785 | 3.94 | | | |
| | A4 | 0.802 | 0.681 | 4.186 | | | |
| Openness to change | O1 | 0.723 | 0.77 | 3.926 | 0.801 | 0.832 | 0.785 |
| | O2 | 0.821 | 0.743 | 3.958 | | | |
| | O3 | 0.782 | 0.799 | 3.914 | | | |
| | O4 | 0.791 | 0.752 | 3.854 | | | |
| Team working | T1 | 0.887 | 0.638 | 4.172 | 0.895 | 0.844 | 0.650 |
| | T2 | 0.823 | 0.704 | 3.663 | | | |
| | T3 | 0.734 | 0.758 | 4.036 | | | |
| Organisational Capabilities | OC1 | 0.792 | 0.853 | 3.847 | 0.940 | 0.874 | 0.802 |
| | OC2 | 0.842 | 0.771 | 3.632 | | | |
| | OC3 | 0.883 | 0.732 | 3.732 | | | |
| | OC4 | 0.843 | 0.767 | 4.048 | | | |
| Technological Capabilities | TC1 | 0.763 | 0.692 | 3.457 | 0.820 | 0.863 | 0.775 |
| | TC2 | 0.822 | 0.83 | 3.66 | | | |
| | TC3 | 0.802 | 0.781 | 4.184 | | | |
| | TC4 | 0.812 | 0.782 | 4.168 | | | |
| Financial Capabilities | F1 | 0.763 | 0.77 | 4.051 | 0.831 | 0.812 | 0.891 |
| | F2 | 0.743 | 0.711 | 4.148 | | | |
| | F3 | 0.842 | 0.723 | 3.837 | | | |
| | F4 | 0.813 | 0.79 | 3.76 | | | |

The Bootstrapping method in SmartPLS software was used to test the statistical significance of path coefficients. Figure 2 shows the P value for all research variables.

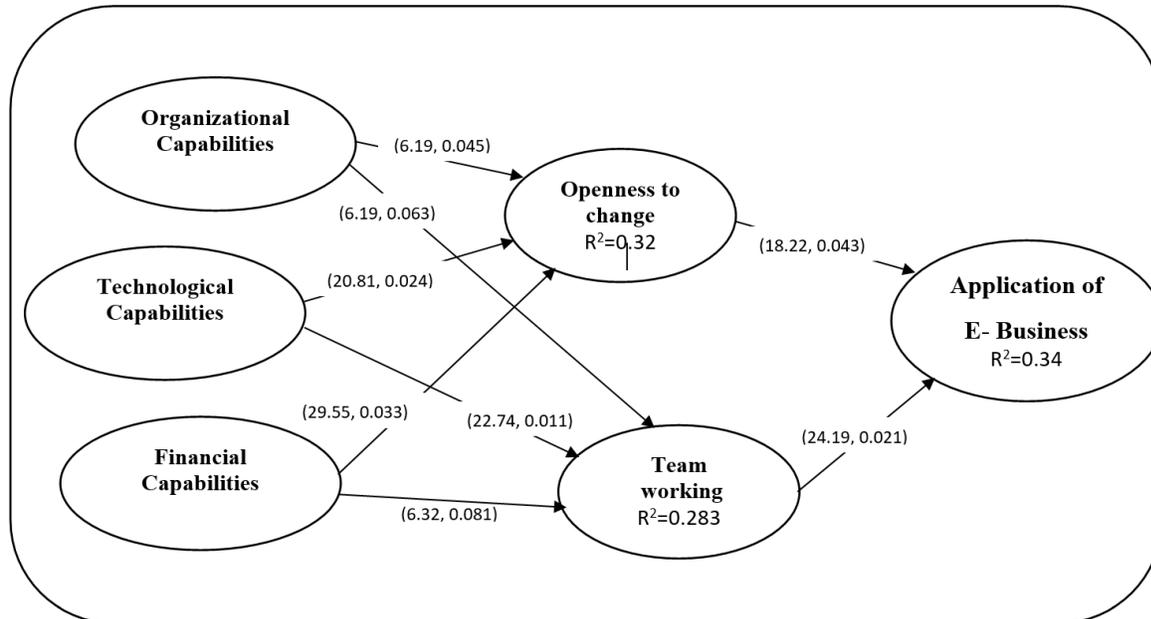


Figure (2) Result of PLS

- **Structural model**

The analysis result shows that the factors (Organisational Capabilities, Technological and Financial Capabilities) have a significant impact on the mediating variable (openness to change). Also, they explain together 0.32 of the openness to change variance. Furthermore, Organisational Capabilities and Technological Capabilities have a significant impact on application of E-business through the mediating variable (openness to change). In addition, they explained 0.34 of the E-business application variance, which proves that Organisational Capabilities and technological capabilities can be considered as E-business driving forces. Whereas the third variable (Financial Capabilities) has not influenced the application of E-business. Thus, H1 and H3 were supported. Moreover, the result indicates that Technological Capabilities have a significant impact on the mediating variable (Team-working). Also, it explains 0.28 of the team-working variance. While Organizational Capabilities and Financial Capabilities do not have influence on the mediating variable (Team-working). However, Technological Capabilities and Financial Capabilities have a significant impact on the application of E-business through the mediating variable (team-working). These results prove that technological and Financial Capabilities can be considered as E-business driving forces. Whereas the third variable (Organizational Capabilities) has no influence on the application of E-business through the mediating variable. Thus, H4 and H6 were supported.



- **Discussion and conclusion**

The primary insights from this research are as follows: Technological Capabilities might be seen as a strong predictor of the application of E-business directly and through the mediating variable team-working and openness to change, this coincides with previous findings in the literature for instance Onetti et al.,2012; Lee and Kim, 2009. It seems that the hard concept of IT including the physical components and values is perceived by employees more than the soft concept relating to leadership, involvement, support and perceptions; the integrated nature of IT capabilities seems unrealised by participants. However, this might be justified as people look for tangible benefits. Regarding the organisational capabilities, the results show that this factor has an influence on application of E-business through mediating variable openness to change, which meet with findings in the previous research (Flanes, 2001; Pastoriza, 2008). The recent trend to extensively introduce and effectively use these capabilities is not only justified but also critical to achieve a strategic competitive advantage through maintaining a high level of organisational performance, a fact that might be linked to a positive value perception and support by organisational management. Finally, the research revealed that Financial Capabilities can be driving forces for E-business application through mediating variable team-working. To sum up, more concern should be directed toward driving forces for E-business application.



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