

# The impact of e-commerce adoption on business strategy in Saudi Arabian small and medium enterprises (SMEs)

E-commerce  
adoption

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Received 26 September 2018  
Accepted 26 September 2018

## Abstract

**Purpose** – This paper aims to examine the impact of e-commerce on business strategy, especially on small and medium enterprises (SMEs) in Saudi Arabia. It also investigates the relationship between e-commerce and business strategy and how the e-commerce niche changes SMEs' strategic management approach. Additionally, this paper identifies the factors that moderate this relationship.

**Design/methodology/approach** – To evaluate and examines the impact of e-commerce on business strategy, the study used a quantitative method by conducting a questionnaire survey in Saudi Arabian SMEs.

**Findings** – The analysis of collected data confirms that e-commerce adoption has an impact on SMEs strategies. Many participants asserted that the introduction of e-commerce in Saudi market has changed their businesses' plans and strategies. The findings identify the major factors that moderate and predict the relationship between e-commerce and business strategy.

**Originality/value** – This study contributes to the literature by discussing and examining the impact of e-commerce adoption on SMEs strategies in the context of Saudi Arabian SMEs. It provides a comprehensive understanding of the relationship between e-commerce and business strategies. The findings of this study can benefit SMEs' owners, managers and employees to understand and acknowledge the impact of e-commerce on their plans and strategies. It also can assist policymakers and governments to develop suitable policies and initiatives.

**Keywords** Strategic management, E-commerce, Saudi Arabia, Small and medium enterprises (SMEs)

**Paper type** Research paper

The Kingdom of Saudi Arabia has been gradually moving away from its long-term dependence on oil-related income in recent years and has turned to its small and medium enterprises (SMEs) to look for sustainable growth and development. Therefore, enhancing the environment for SMEs has become a priority for the Saudi Arabia Government to diversify its economy. The groundwork for this phase has already been laid, as the Kingdom has implemented some policies and regulations to encourage investment and is steadily reforming and updating the legal system, banking rules and employment law, in readiness for more participation in global market places. A report by a high level political forum on sustainable development indicated that the Saudi Arabian Government has conducted the



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Review of Economics and Political  
Science  
Vol. 4 No. 1, 2019  
pp. 73-88  
Emerald Publishing Limited  
2631-3561  
DOI 10.1108/REPS-10-2018-013

first attempt to review the status of sustainable development goals in 2018 to be aligned with 2030 Vision. This includes government, private and non-government sectors to achieve the goals of the 2030 Vision for sustainable growth. It has reviewed the progress in 17 areas, one of which is aiming to improve the business climate and to invest in technology (United Nations, 2018). The Saudi Arabian Government has put many initiatives in place to support SMEs. For example, it has allocated 72bn SR to help SMEs and established an agency to facilitate regulations and eliminate the barriers that face these businesses (SMEA, 2017). The SME sector is one of the important components of Saudi Arabian economy. Thus, it is necessary to assist the SMEs to compete with large businesses. Cost reduction and sustainable growth has become a priority for these businesses to grow and stay competitive in the market. E-commerce is an opportunity for SMEs in Saudi Arabia to shift from traditional trade to the new trend that applies technology. However, it is not so simple to adopt e-commerce, especially in developing countries such as Saudi Arabia. This study investigates how the notion of e-commerce shifts businesses' strategies towards new era of doing businesses that focusses on advanced technology. Even though E-commerce has only begun to have a presence in the past few years, it is still uncertain how far it will be permitted to permeate Saudi Arabian business life. This study traces the adoption of ecommerce in SMEs in Saudi Arabia and examines what impact this phenomenon is having on business strategy. Additionally, it attempts to identify the factors that moderate this relationship. The findings of this study can help SMEs to grow successfully and provide policy and decision makers with needed information and knowledge.

### Literature review

The number of SMEs in the world is increasing. Saudi Arabia alone has around 1.3 million enterprises that account for 20 per cent of GDP (SMEA, 2017). An aim of the Vision 2030 plan is to increase SMEs' contribution to Saudi Arabian GDP to 35 per cent (Vision 2030, 2016). There are many benefits for adopting e-commerce. E-commerce may provide businesses with an innovative method of using available resources and enhance performance and operational aspects (Lee *et al.*, 2015). Moreover, it has been suggested that e-commerce in general can reduce cost and enhance customer services (Damanpour and Damanpour, 2001). However, it is necessary for SMEs to shift their strategies to become compatible with the e-commerce era which is expected to grow annually by 20 per cent in Saudi Arabia (CITC, 2017).

### *Business strategy*

Andrews (1971) defines business strategy as:

The pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, produces the principal policies and plan for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organization it is or intends to be, and the nature of the economic and noneconomic contribution it intends to make to its shareholders, employees, customers, and communities.

Porter (1980) defines strategy more succinctly as "offensive and defensive actions undertaken to counter competitive forces and thus provide the firm with an increased return on its investment". Three generic strategies were identified by Porter (1998): cost leadership, differentiation and focus strategy. It is generally agreed that the most popular business strategies are cost leading and differentiation strategies (Dess and Davis, 1984; Zheng, 2001), which allow businesses to be competitive and outperform competitors (Porter, 1998). IT has now become an important element of strategic management. As a result, Porter's (2001)

revision of his strategic management thinking was influenced by the emergence of internet as an important technology in the business landscape. The introduction of the digital economy has shifted the way of managing both businesses and public sectors. The dynamic changes in the marketplace have encouraged managers to adopt e-commerce in order to remain strategically competitive and adopting e-commerce requires a strategy that focusses on using resources to achieve competitive advantages (Marcelo Torres *et al.*, 2014). Business strategy is about creating value and designing a plan to be different from other business. However, businesses differ in both their capabilities and resources. Consequently, an appropriate strategy is needed to concentrate on resource allocation and operations (Helms *et al.*, 2008). Thus, a strategy is needed to carry out their operations differently from their competitors (Porter, 1998). Business strategy objectives are activities designed to enable businesses to be competitive in the future (Lee *et al.*, 2015), and SMEs can obtain high profits by locating itself favourably in the market (Porter, 1980). Popular strategic approaches to create value and to be competitive include the positioning approach (Porter, 1980), the resource-based view (Wernerfelt, 1984), diffusion of innovations (Rogers, 1995) and dynamic capability theory (Teece *et al.*, 1997).

### *E-commerce*

E-commerce is defined as “buying and selling products and services over the internet and the use of computer systems to improve overall company efficiencies” (Oudan, 2010, p. 19). To many people, e-commerce is simply conducting business online (Ofori *et al.*, 2002). However, Ofori *et al.* (2002) define e-commerce as “the application of information technology solutions to help define and develop new strategies for addressing business problems”. Businesses can gain many advantages from e-commerce. For instance, SMEs can benefit from 24-h availability of services, reaching customers directly, satisfying their needs, promoting relationship with customers and exchanging information (Gunasekaran *et al.*, 2002) as well as increasing sales and improving productivity (Awa *et al.*, 2015), and cost effectiveness (Faloye, 2014). Ratnasingam (2009) found that it is important to adopt e-commerce to accomplish competitive and strategic advantages, particularly for small businesses. In Saudi Arabia, there has been an increase in the number of users of the internet and e-commerce. A report in 2017 by the Communication and Information Technology Commission (CITC) indicated that e-commerce is expected to grow by 20 per cent in the future. The volume of e-commerce in Saudi Arabia reached 29.7bn RS in 2016. However, only 7 per cent of customers bought online from local businesses (CITC, 2017). Thus, this is the perfect time for SMEs to adopt e-commerce to be competitive with international businesses.

### *Small and medium enterprises*

SMEs are defined as “non-subsidary, independent firms which employ fewer than a given number of employees. This number varies across countries” (OECD, 2005). The European Union sets a limit of 250 employees, while USA sets a limit of 500 employees. Small enterprises are those with less than 50 employees (OECD, 2005). The Saudi Arabian Small and Medium Enterprises Authority (SMEA, 2017) defines SMEs as “Any enterprise with an independent commercial registration that has less than 249 employees, and less than SAR 200 million as revenue”. However, there is no universal definition for SMEs.

SMEs play an important role in most countries’ economy (Ramanathan *et al.*, 2012; Awa *et al.*, 2015). In the context of Saudi Arabian economy, the share of SMEs in GDP represents only 21 per cent, which is very low compared to other countries. For instance, the share of SMEs in the 15 largest economies in the world ranges between 40 and 60 per cent of their GDP. Moreover, despite their modest contribution to GDP, SMEs (about 1.3 million enterprises) represent 98 per cent of enterprise in Saudi Arabia (SMEA, 2017). The Saudi Arabian

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Government has established a Small and Medium Enterprises Authority (SMEA) to enhance their performance and to reach the global average for their contribution to the economy. The increase of e-commerce sales and users has encouraged SMEs to adopt e-commerce. To do that, SMEs have to apply a strategic approach that helps them to implement e-commerce successfully. Some of the main factors that influence adoption of e-commerce in the context of developed countries have been identified as internet price, privacy, security and speed of the internet (Grandon and Pearson, 2004). The Saudi Arabian Vision 2030 focusses on developing and improving SMEs productivity and performance. However, the increase of expatriate labor cost, taxes, wages and other services have become obstacles.

### Research problem and conceptual framework research problem

The research problem of this paper is to understand and investigate the impact of e-commerce on business strategy. E-commerce has been a part of international business for around two decades, but it has not penetrated into all geographical areas of the world and into all layers of society.

People tend to think of the term “e-commerce” as just the process of buying and selling goods online, but in fact it covers a far wider range of systems and processes. There are various types of e-commerce. These types can be summarized as business to consumer selling (B2C); business to business selling (B2B); business processes that support buying and selling activities; consumer to consumer buying and selling (C2C), and business to government (B2G) selling (Schneider, 2010). This list is drawn widely to encompass all types of activity that come under the label of e-commerce. What these all have in common is that they take place by using the internet or world wide web. As advanced technology has become a necessary tool for companies to stay competitive and perform efficiently, e-commerce has become the subject of business governance and management (Wang and Zhou, 2009). The development of technology motivates enterprises to concentrate on different strategies and allocate their resources for necessary strategies more effectively (Lee *et al.*, 2015). E-commerce is an opportunity for companies to reach their customers anywhere and this means businesses have to change their strategic planning according to their e-commerce strategy (Oudan, 2010). However, traditional strategic planning is still required for some activities (Oudan, 2010). Porter (2001) stated that “the winners will be those that view internet as a complement to, not a cannibal of, traditional ways of competing” (p. 63). He asserts that the companies that use internet as a complement will succeed. Deploying the internet to be competitive gives good opportunities for companies to build a unique strategic positioning. A study by Al-Bakri and Katsioloudes (2015) emphasized that an enterprise’s strategy is an important factor to adopt e-commerce successfully. They found that there are internal and external organizational factors that affect the adoption of e-commerce in SMEs. These factors are readiness, strategy, manager’s perceptions, and the demands of trading partners (Al-Bakri and Katsioloudes, 2015). Their study was conducted in Jordan; however, the positions of SMEs in other Middle Eastern countries are very similar. Another study of 300 mobile phone users in Oman concluded that 24 per cent of respondents had experience of buying goods and services on the internet and 66 per cent would even be willing to try this using their mobile phone (Manochehri and AlHinai, 2008).

On the other hand, it has been argued that the internet is not a source of competitive advantage, as all industries use the internet (Tapscott, 2001). Another study by Ho (2011) indicated that there is no direct relationship between SMEs’ strategic position and its e-business capabilities, although he recommended SMEs to invest in e-commerce applications. A study by Hamad *et al.* (2018) indicated that Egyptian manufacturing SMEs have some difficulties in understanding the relationship between e-commerce and competitive advantage, which is the most important factor in strategy formulation. However, the study focussed on

B2B and ignored B2C. Additionally, it only addressed competitive advantage and ignored the whole process of achieving it, which is business strategy.

Technology is moving on very fast in the Middle Eastern region, and there is evidently a potential market waiting for those businesses who have the vision to develop suitable marketing and sales strategies. There are moves in Saudi Arabia to open up market for more e-commerce, and to enhance infrastructure through public-private partnership. However, one area that has aroused much criticism from international observers is that the strategic decision involves relying less on foreign workers and encouraging more Saudi nationals to take up jobs. This may well have a negative impact on e-commerce strategies, as Saudi Arabian citizens are likely to have less experience in the e-commerce niche and practice than international workers, especially in high-technology businesses. SMEs need to shift their informal strategies and adapt to the new changes in the Saudi Arabian market. It is expected that international businesses will enter the Saudi Arabian market in the near future which may increase competition and force local companies to employ new ways of strategic thinking. E-commerce is an opportunity for SMEs to reposition their existence in the Saudi Arabian market by focussing their strategies on the use of technology. The research reported in this paper was an attempt to examine the relationship between e-commerce and business strategy and to identify the main factors that moderate this relationship and their impact.

#### *Research conceptual framework*

In the literature reviewed, it was generally assumed that there is relationship between e-commerce adoption and business strategy (Gunasekaran *et al.*, 2002; Oudan, 2010; Lee *et al.*, 2015). It was also assumed (Porter, 2001; Ramanathan *et al.*, 2012; Al-Bakri and Katsioloudes, 2015; Awa *et al.*, 2015; Hamad *et al.*, 2018) that there are some factors that moderate this relationship, for example, increased sales and revenues, competitive advantage, the relationship with customers and partners, the use of IT and dynamic changes. Therefore, this research examines the impact of ecommerce adoption on SME strategies and tests the effects of these moderators on this relationship.

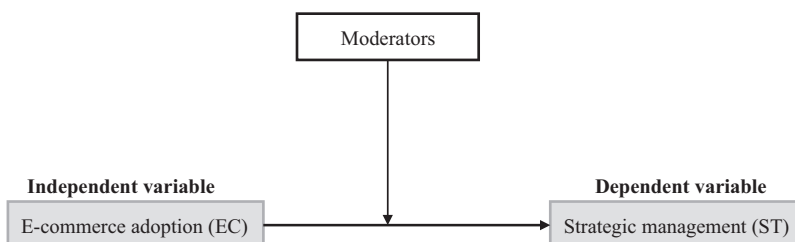
The model proposed for this research is illustrated below (Figure 1).

### Research questions and objectives

#### *Research questions*

RQ1. What is the impact of e-commerce adoption on business strategy?

RQ2. What are the factors that moderate the relationship between e-commerce and strategic management?



**Figure 1.**  
Proposed research model

*Research objectives*

- to critically review the literature on e-commerce, Small and Medium Sized enterprises perspective and business strategy;
- to explore the impact of e-commerce on business strategies;
- to identify the factors that moderate the relationship between e-commerce and business strategies in SMEs in Saudi Arabia; and
- to test the proposed model and identify the significant impact of independent variable and moderators.

**Research methodology**

A quantitative methodology was used to test the research conceptual framework and answer the research questions. Thus, the data for this study come from a survey conducted in 2018 among SMEs in Saudi Arabia. Questionnaires were used to ascertain and understand (the impact of e-commerce on SMEs' strategies and to predict the significant factors that moderate this relationship. Overall, the study provides evidence to show how much real change is taking place in SMEs' strategies and to suggest some recommendations for policymakers and small business owners in Saudi Arabia and countries in the middle east.

*Data collection*

The survey was designed in 3 parts: demographic information, business information and the relationship between e-commerce and business strategy, as well as questions intended to explore the effect of any moderators on this relationship. The questionnaires were distributed over three months to participants to recover more responses. Three types of questions were used. First, Likert scale statements with five levels of agreement were used. In addition, category questions were included, where the respondent's answer can only fit into one category. Additionally, "yes" and "no" questions were used for certain question. A pilot survey was distributed among academic experts in the field who were likely to be interested in the topic and some SME owners. The feedback was beneficial and some changes were made to the questionnaires. The reliability of the survey was measured by using Cronbach's alpha. The alpha coefficient showed that the internal consistency was 0.823 which is acceptable.

*Sample size*

For the purpose of this study, the sample size was determined by the total number of SMEs in Saudi Arabia and drawn from managers, owners and employees of SMEs in Saudi Arabia. The sample size was determined by using [Krejcie and Morgan's table \(1970\)](#) for sample size and population. As the approximate number of SMEs in Saudi Arabia is  $N = 1,000,000$ , the representative sample will be 384. However, 500 questionnaires were distributed electronically and personally to participants. In total, 340 questionnaires were retrieved, which is a total response rate of 69 per cent. A total of 332 valid questionnaires were obtained and examined, while 8 defective questionnaires were excluded. [Neuman \(2005\)](#) suggests that the total response rate can be calculated by dividing total number of responses by total numbers in the sample minus ineligible and unreachable responses which is 90 per cent. Although response rates of 50 per cent and even as low as 35 per cent ([Barunch and Holtom, 2008](#)) are considered acceptable for academic studies involving individuals and organizations' representatives.



### Data analysis and findings

The analysis of survey results was conducted via descriptive analysis to describe the basic features of the data; for example, frequency, tendency, other descriptive statistics. Step-wise multiple regression was then performed to predict the value and the change in the dependent variable due to changes in independent variables and to examine the relationship between business strategies and independent variables to test the proposed model. The goal of using forward step-wise multiple regression was to examine the impact of e-commerce on strategic management and to come up with the best combination of independent predictors (variables) that predict the dependent variable (strategic management).

The findings of this study identified some factors that moderate the relationship between the independent variable, E-commerce adoption (EC) and dependent variable: strategic management (ST). The identified moderators that were added to the models are relationship with customers and partners (RCP), Use of IT (UOIT), Increase sales and revenues (ISR), Dynamic change in IT (DCIT)s, Long-term planning (LTP), Entrance to new markets (ENM) and Competitive advantage (CA).

#### *Profile of respondents*

The findings show that 66 per cent of respondents were male, while only 34 per cent were females and the majority of these SMEs' owners and employees were under 40 years old. Moreover, the respondents were found to be well- educated, with 74 per cent of respondents having a BSc or master's degree. However, their work experience was relatively short: only 15 per cent of respondents had more than 15 years' work experience while 40 per cent had less than 5 years. Over half the respondents (55 per cent), were owners and a further 10 per cent were managers, while employees, and others made up the remaining third (Tables I, II, III and IV).

#### *General characteristics of small and medium enterprises*

As shown in Table V, most of the respondents (80 per cent) were in commercial SMEs, while only 20 per cent were from manufacturing SMEs. This suggests that the majority of Saudi SMEs are commercial, with the two largest groups being real estate and transformative industry, which together represent 35 per cent of SMEs in Saudi Arabia.

Gender	Frequency	(%)	Valid (%)	Cumulative (%)
<i>Valid</i>				
Male	218	65.7	65.7	65.7
Female	114	34.3	34.3	100.0
Total	332	100.0	100.0	

**Table I.**  
Frequency and per cent by gender

Age	Frequency	(%)	Valid (%)	Cumulative (%)
<i>Valid</i>				
Less than 30 years	99	29.8	29.8	29.8
30-40 years	117	35.2	35.2	65.1
40-50 years	78	23.5	23.5	88.6
More than 50 years	38	11.4	11.4	100.0
Total	332	100.0	100.0	

**Table II.**  
Frequency and per cent by Age

*Descriptive analysis of studied variables*

In relation to SMEs, strategic management and planning shows that 65 per cent of respondents agreed that e-commerce has changed their approach to strategic management and planning, while only 8 per cent indicated that it had not. With regard to the moderators of this relationship, the vast majority of respondents (94 per cent) agreed that e-commerce can enhance their relationships with customers and partners (RCP). Thus, it is clear that most of SMEs consider their relationships with stakeholders when they formulate their plans. The descriptive analysis also revealed that 61 per cent of respondents' SMEs focussed on Use of IT (UOIT) when they set up their plans, showing their awareness of the essential role of IT in their businesses. Moreover, 46 per cent of them agreed that IT and e-commerce have positive impact on their sales. Therefore, they consider this in their strategic

**Table III.**  
Frequency and per cent by work experience

Working experience	Frequency	(%)	Valid (%)	Cumulative (%)
<i>Valid</i>				
Less than 5 years	131	39.5	39.5	39.5
5-10 years	97	29.2	29.2	68.7
10-15 years	56	16.9	16.9	85.5
15-20 years	48	14.5	14.5	100.0
Total	332	100.0	100.0	

**Table IV.**  
Frequency and percentage by participant position

Position	Frequency	(%)	Valid (%)	Cumulative (%)
Valid	Owners	183	55.1	55.8
	Managers	35	10.5	10.7
	Employees	105	31.6	32.0
	Others	5	1.5	1.5
	Total	328	98.8	100.0
Missing	System	4	1.2	
Total	332	100.0		

**Table V.**  
Frequency and per cent by business type

Business type and classification	Frequency	(%)	Valid (%)	Cumulative (%)
<i>Business type</i>				
Commercial	64	79.5	79.5	79.5
Industrial	8	20.5	20.5	100.0
Total	32	100.0	100.0	
<i>Business classification</i>				
Food and accommodation	30	9.0	9.0	9.0
Telecommunications	32	9.6	9.6	18.7
Construction	40	12.0	12.0	30.7
Real estates	58	17.5	17.5	48.2
Retails and wholesale	50	15.1	15.1	63.3
Transformative industry	57	17.2	17.2	80.4
Agriculture	11	3.3	3.3	83.7
Health care	39	11.7	11.7	95.5
Others	15	4.5	4.5	100.0
Total	332	100.0	100.0	



management and planning. In relation to dynamic changes in technology (DCIT), a large majority (77 per cent) of respondents agreed that they had changed their future planning because of developments in IT, showing how technology has become an important component of all these businesses. In terms of long-term planning (LTP), 58 per cent of the respondents declared that e-commerce had contributed to changing their approach to strategic management and planning. Thus, it can be assumed that these SMEs were aware of e-commerce. Finally, 54 per cent of the participants believed that adopting e-commerce would create competitive advantages for them. Indeed, competitive advantage is one of the main goals of strategic management. Thus, the findings suggest that these participants believe that their SMEs will accomplish competitive advantages and stay competitive in the market by considering e-commerce in their strategic management and planning.

### Research model testing

The results shown in Tables VI, VII and VIII establish that adoption of e-commerce has a positive impact on Saudi SMEs' strategies and planning. Using step-wise multiple regression, it was shown that there are eight models that explain the relationship between e-commerce and strategic planning. The first model consists of e-commerce as an independent variable that explains 53.7 per cent of variation in SMEs' strategic management in Saudi Arabia, with a significant relationship ( $R^2 = 0.537$ ,  $p < 0.01$ ). The value of  $\beta$  for the first model was 0.459 and the constant was 1.785. Therefore, the equation for this model is:

$$ST (\text{Strategic management}) = 1.785 + 0.459 EC (E - \text{commerce})$$

In the second model, the first moderator, "Relationship with customers and partners" (RCP) was added to the model. The analysis showed that these two independent variables explain 64.9 per cent of variation change in SMEs strategic management, with a significant relationship ( $R^2 = 0.649$ ,  $p < 0.01$ ). The first moderator increased the variation by 11.2 per

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.733 <sup>a</sup>	0.537	0.536	0.38457
2	0.806 <sup>b</sup>	0.649	0.647	0.33542
3	0.855 <sup>c</sup>	0.731	0.729	0.29415
4	0.877 <sup>d</sup>	0.770	0.767	0.27249
5	0.889 <sup>e</sup>	0.790	0.787	0.26044
6	0.894 <sup>f</sup>	0.799	0.795	0.25548
7	0.900 <sup>g</sup>	0.810	0.806	0.24878
8	0.901 <sup>h</sup>	0.812	0.808	0.24755

**Notes:** <sup>a</sup>Predictors: (Constant), E-commerce (EC); <sup>b</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP); <sup>c</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT); <sup>d</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR); <sup>e</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR), IT dynamic changes (DCIT); <sup>f</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR), IT dynamic changes (DCIT), Long-term planning (LTP); <sup>g</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR), IT dynamic change (DCIT)s, Long-term planning (LTP), Entrance to new markets (ENM); <sup>h</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR), IT dynamic change (DCIT)s, Long-term planning (LTP), Entrance to new markets (ENM), competitive advantages (CA)

**Table VI.**  
Model summary correlation coefficient between independent variables and dependent variable (strategic management)

Model	ANOVA <sup>a</sup>	Sum of squares	Df	Mean square	F	Sig.
1	Regression	56.682	1,330	56.682	383.264	0.000 <sup>b</sup>
	Residual	48.805		0.148		
	Total	105.487	331			
2	Regression	68.471	2,329	34.236	304.291	0.000 <sup>c</sup>
	residual	37.016		0.113		
	Total	105.487	331			
3	Regression	77.107	3,328	25.702	297.055	0.000 <sup>d</sup>
	residual	28.380		0.087		
	Total	105.487	331			
4	Regression	81.208	4,327	20.302	273.430	0.000 <sup>e</sup>
	residual	24.279		0.074		
	Total	105.487	331			
5	Regression	83.375	5,326	16.675	245.843	0.000 <sup>f</sup>
	residual	22.112		0.068		
	Total	105.487	331			
6	Regression	84.275	6,325	14.046	215.204	0.000 <sup>g</sup>
	residual	21.212		0.065		
	Total	105.487	331			
7	Regression	85.435	7,324	12.205	197.204	0.000 <sup>h</sup>
	residual	20.052		0.062		
	Total	105.487	331			
8	Regression	85.694	8,323	10.712	174.803	0.000 <sup>i</sup>
	residual	19.793		0.061		
	Total	105.487	331			

**Notes:** <sup>a</sup>Dependent variable: Strategic Management (ST); <sup>b</sup>Predictors: (Constant), E-commerce (EC); <sup>c</sup>Predictors: (Constant), E-commerce(EC), Relationship with B2C & B2B (RCP); <sup>d</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT); <sup>e</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR); <sup>f</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR), IT dynamic changes (DCIT); <sup>g</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR), IT dynamic changes (DCIT), Long-term planning (LTP); <sup>h</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR), IT dynamic change (DCIT)s, Long-term planning (LTP), Entrance to new markets(ENM); <sup>i</sup>Predictors: (Constant), E-commerce (EC), Relationship with B2C & B2B (RCP), Use of IT (UOIT), Increase sales and revenues (ISR), IT dynamic change (DCIT)s, Long-term planning (LTP), Entrance to new markets(ENM), competitive advantages (CA)

**Table VII.**  
ANOVA for step-wise multiple regression analysis of variance and Sig.

cent, which explains the changes in strategic. In the third model, a moderator “Use of IT” (UOIT) was added to the main model. The results indicated that these three variables explain the relationship with change in strategic management by 73.1 per cent with a significant relationship ( $R^2 = 0.731, p < 0.01$ ) and increased the variation of the relationship by 8.2 per cent. For the fourth model, the moderator “Increase sales and revenues” (ISR) was added to the model. The data showed there was a 4 per cent increase in variation and that the four variables account for 77 per cent of change in SMEs’ strategic management, with a significant relationship of ( $R^2 = 0.770, p < 0.01$ ). the moderator “Dynamic change of IT” (DCIT) was then added to the model (fifth model). These five variables explain 79 per cent of variation in strategic management of SMEs. The fifth independent variable increased the variation by only 2 per cent, with a significant relationship of ( $R^2 = 0.790, p < 0.01$ ). A fifth moderator variable was added to the model “Long-term planning” (LTP). This variable increased the variation to 77.9 per cent, which added only 1 per cent to the explanation of the

Model	Unstandardized coefficients		Standardized coefficients	T	Sig
	B	Std. error	Beta		
1 (Constant)	1.785	0.092	0.733	19.368	0.000
E-commerce	0.459	0.023		19.577	0.000
2 (Constant)	0.800	0.125	0.692	6.381	0.000
E-commerce	0.433	0.021		21.022	0.000
Relationship with B2C & B2B	0.239	0.023	0.337	10.236	0.000
3 (Constant)	0.728	0.110	0.473	6.608	0.000
E-commerce	0.296	0.023		13.044	0.000
Relationship with B2C & B2B	0.221	0.021	0.311	10.747	0.000
Use of IT	0.421	0.042	0.363	9.990	0.000
4 (Constant)	0.607	0.103	0.326	5.868	0.000
E-commerce	0.204	0.024		8.357	0.000
Relationship with B2C & B2B	0.228	0.019	0.321	11.956	0.000
Use of IT	0.336	0.041	0.290	8.285	0.000
Increase sales and revenues	0.175	0.024	0.280	7.431	0.000
5 (Constant)	0.334	0.110	0.303	3.033	0.003
E-commerce	0.189	0.023		8.078	0.000
Relationship with B2C & B2B	0.221	0.018	0.311	12.100	0.000
Use of IT	0.248	0.042	0.215	5.942	0.000
Increase sales and revenues	0.212	0.023	0.339	9.049	0.000
IT dynamic changes	0.214	0.038	0.160	5.653	0.000
6 (Constant)	0.353	0.108	0.255	3.268	0.001
E-commerce	0.159	0.024		6.538	0.000
Relationship with B2C & B2B	0.201	0.019	0.283	10.742	0.000
Use of IT	0.225	0.041	0.194	5.426	0.000
Increase sales and revenues	0.210	0.023	0.336	9.137	0.000
IT dynamic changes	0.191	0.038	0.143	5.071	0.000
Long-term planning	0.075	0.020	0.122	3.713	0.000
7 (Constant)	-0.004	0.134	0.253	-0.029	0.977
E-commerce	0.158	0.024		6.660	0.000
Relationship with B2C & B2B	0.185	0.019	0.260	9.897	0.000
Use of IT	0.160	0.043	0.138	3.705	0.000
Increase sales and revenues	0.200	0.023	0.321	8.898	0.000
IT dynamic changes	0.170	0.037	0.128	4.605	0.000
Long-term planning	0.090	0.020	0.147	4.501	0.000
Entrance to new markets	0.121	0.028	0.126	4.328	0.000
8 (Constant)	0.001	0.133	0.219	0.009	0.993
E-commerce	0.137	0.026		5.327	0.000
Relationship with B2C & B2B	0.191	0.019	0.269	10.149	0.000
Use of IT	0.148	0.043	0.128	3.426	0.001
Increase sales and revenues	0.197	0.022	0.316	8.785	0.000
IT dynamic changes	0.149	0.038	0.111	3.881	0.000
Long-term planning	0.075	0.021	0.123	3.557	0.000
Entrance to new markets	0.119	0.028	0.125	4.307	0.000
Competitive advantages	0.047	0.023	0.083	2.057	0.040

**Table VIII.**  
Coefficients for the independent and dependent variables and sig.

**Note:** Coefficient sa dependent variable: Strategic management

variation of the relationship between e-commerce and SMEs' strategic management. However, it showed a significant relationship ( $R^2 = 0.779, p < 0.01$ ). The seventh model consisted of the previous variables and "Entrance of new markets" (ENM). The sixth moderator increased the explanation of the variation by 1.1 per cent with a significant relationship of ( $R^2 = 0.810, p < 0.01$ ). In the final model, the moderator "Competitive advantage" (CA) was added to the model. The data indicated that the eight independent variables now explained 81.2 per cent of variation in SMEs variation, which added only 0.2 per cent of the variation with a significant relationship of ( $R^2 = 0.812, p < 0.01$ ). The  $\beta$ s (Table VIII) for the model components are 0.137, 0.191, 0.148, 0.197, 0.149, 0.075, 0.119, 0.047 respectively and the constant is 0.001. Therefore, the proposed research framework (Figure 2) and the equation of the last model are illustrated below. Based on the data analysis, it is considered that this model is the best model for predicting the value of the dependent variable (ST).

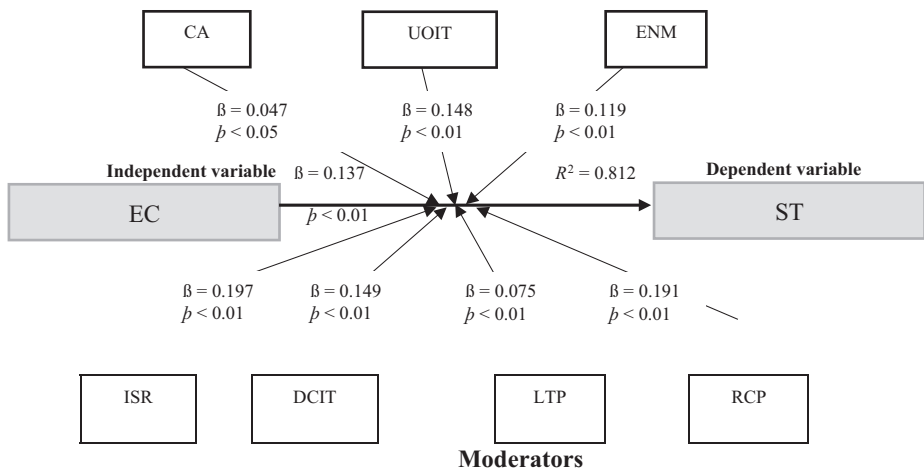
$$\text{Predicted SM} = 0.001 + 0.137EC + 0.191RCP + 0.148UOT + 0.197ISR + 0.149DCI + 0.075LTP + 0.119ENM + 0.047CA$$

To conclude, it is clear that e-commerce has a positive impact on SMEs' strategies and strategic planning. Additionally, the results indicated that the identified moderators have significant effects on this relationship. Thus, many businesses in Saudi Arabia have to change the way they planning and formulate their strategy. It is recommended that SMEs need to consider e-commerce as important factor that can assist them to overcome their current and future challenges and obstacles.

This study tested the suggested model and examined the impact of predictors on the relationship between e-commerce adoption and SMEs enterprises.

**Discussion**

The purpose of this study was to examine the impact of e-commerce adoption on business strategy especially on SMEs strategies in Saudi Arabia. The possible effects of independent variables EC, RCP, UOIT, ISR, DCIT, LTP, ENM and CA on the dependent variable,



**Figure 2.**  
Illustration of the  
research framework

strategic management (SM) were examined. The analysis of the data strongly supports the research framework. It showed that there is a positive correlation between e-commerce adoption and the changes in strategic management. About 65 per cent of the participants agreed that e-commerce has positive effect on organizations' or businesses' strategic planning which explained ( $R^2 = 0.537$ ,  $p < 0.01$ ) of variation of strategic management. Nevertheless, model eight, which includes all the independent variables (e-commerce and moderators) explains 81 per cent ( $R^2$ ) of variation of strategic management.

This study confirms that the e-commerce has a positive impact on shifting strategic management and planning. This confirms the findings of scholars (Porter, 2001; Wang and Zhou, 2009; Oudan, 2010; Marcelo Torres *et al.*, 2014; Lee *et al.*, 2015) that e-commerce has a great influence on strategic management and businesses planning. However, some of these studies ignored the impact of ecommerce on developing countries and SMEs. These studies mainly focussed on developed countries and large-sized enterprises. While it is believed that formal strategic management is necessary for all enterprises in developed and developing countries, this study fills this gap by focussing on SMEs in developing countries such as Saudi Arabia. It is thus recommended for SMEs in Saudi Arabia to consider adoption of e-commerce in their future strategies to expand, grow and to be competitive in the market. Indeed, some businesses have already shifted their strategies to be compatible and aligned with e-commerce. Now there is an opportunity for businesses to overcome current obstacles by adopting e-commerce. The adoption of e-commerce can lead to positive results such increasing the sales, profits, and efficiency of performance. As pointed out above, SMEs also can benefit from the 24/7 availability of services, reaching customers directly, satisfying their needs, increasing sales, improving productivity (Awa *et al.*, 2015), promoting relationship with customers, exchanging information (Gunasekaran *et al.*, 2002) and cost effectiveness (Faloye, 2014). These benefits can be achieved through the consideration of e-commerce in SMEs strategies. However, SMEs have to pay attention to the moderators re identified in this study, which may have significant on the relationship between ecommerce and business strategies. Thus, SMEs in Saudi Arabia may benefit from this study in the future and use the model to successfully change and shift their strategic approach. To maintain sustainable growth, SMEs need to abandon the informal approach to strategic management and apply a formal approach that focusses on dynamic changes in IT.

## Research implications

### *Theoretical implication*

Most previous studies have concentrated on the process of e-commerce adoption and its advantages. However, this study is unique in exploring the impact of e-commerce adoption on business strategy. It contributes to the literature by discussing and examining the impact of ecommerce adoption on SMEs strategies in the context of Saudi Arabia. Therefore, this study provides a comprehensive understanding of the relationship between e-commerce and business strategies. This will increase the knowledge and literature of e-commerce adoption, as well as strategic management concepts.

This study contributes to this area of knowledge by addressing the question: What is the impact of e-commerce adoption on business strategy? This question has not been previously addressed in the literature. It also has answered the question regarding which factors may moderate the relationship between e-commerce and business strategies. By identifying the factors that affect the relationship between e-commerce adoption and strategic management it has provided another contribution to knowledge in this field.

Moreover, the findings of this study confirm that the proposed framework is valid in illustrating the impact of e-commerce on business strategy which will be useful for future

studies. Finally, the research focussed on SMEs in Saudi Arabia, which might be helpful for SMEs in other countries with similar characteristics to those in Saudi Arabia.

#### *Practical implications*

The findings of this study can benefit SMEs' owners, managers and employees to help them understand and acknowledge the impact of e-commerce on their plans and strategies. Additionally, it will raise their awareness of the factors that moderate the relationship between e-commerce adoption and business strategies. It will be also beneficial for SMEs to plan their strategies in accordance with the findings of this research. The unique information and findings of this study can be used by owners, managers and employees to successfully adopt e-commerce and plan strategically.

Moreover, the results of this study can assist policy makers and governments to develop suitable policies and initiatives. This will encourage SMEs to adopt e-commerce and to begin formulating formal strategies. It is recommended for governments to provide advice to SMEs on the process of transforming towards the use of technology and e-commerce. Additionally, policymakers need to reduce the barriers to adopting e-commerce and provide technical, financial and managerial support for SMEs.

#### **Conclusion**

Many SMEs in Saudi Arabia and around the world are challenged by the development of e-commerce, which makes local and global markets very competitive. Therefore, SMEs need to adapt their strategies in accordance with these dynamic changes, to overcome the current difficulties. In Saudi Arabia, it will be very difficult for SMEs to stay in the market without shifting their strategies and operations towards e-commerce specially at the current time where there is an increase in cost of fees, labour and taxes.

This study has confirmed that e-commerce has a strong relationship with business strategy and that this relationship can be affected by certain moderators. Moreover, it was found that many SMEs are willing to change their strategies to fit with dynamic changes in the business world. However, there are some challenges that face SMEs in adopting e-commerce. It is recommended that future studies are carried out to explore the challenges and obstacles that face SMEs in developing countries and come up with solutions for adopting e-commerce successfully. As the Saudi Arabian Vision 2030 focusses on developing and growing SMEs, the findings of this research can be helpful to facilitate and motivate SMEs in Saudi Arabia and other countries to obtain sustainable growth and a thriving economy.

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