

The Relationship Between Technological, Organizational And Environmental Factors With Adopt B2B E-Commerce Moderating Role By Trust Among Libyans Companies' During Coronavirus (COVID-19)

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Abstract

Currently, adoption Business to Business E- Commerce (B2B E-Commerce) in Libyan companies specifically managers and top management has become a central issue for the developing countries. However, to maintain (B2B E-Commerce) in today's technological factors, organizational factors, environmental factors are challenging due to many changes occur within the Critically, globalization became a major contributor to organizational change especially in digital marketing. Therefore, this study examines the relationship between technological, organizational and environmental factors with adopt B2B E-Commerce Moderating role by trust among Libyans companies' managers during coronavirus disease (COVID-19). Furthermore, the study sample use survey questionnaire randomly distributed to 310 questionnaires in Libyans companies', of which 270 were found suitable for analysis. Data analysis use (SPSS) and (PLS-SEM). The findings of the study revealed mixed result H1, H2, H3, H4 were significant and H5, H6 not significant. The findings of this study will assist the policy makers in the Libyans companies' to come up with policies that will ensure quality of services to the patients especially that the companies' would have to compete with the private companies during Coronavirus Disease (COVID-19). In this realm, it is therefore essential that the findings of this study with respect to application of employee capacity between Libyans companies, employee commitment and IT should be taken seriously by the Libyans companies'. When this is done, it will go a long way to assist the Libyans companies' directors, and other government officials in general to effectively implement E- Commerce and which will eventually improve the performance of the companies' during Coronavirus Disease (COVID-19).

Keywords: Coronavirus Disease (COVID-19), Technological, Organizational And Environmental Factors, B2B E-Commerce, Trust And Libyans Companies.

I. Introduction

Information Communication Technology offers opportunities in digital marketing to improve and easy the relationship between customers, business partners and suppliers Moreover, make the process easy in digital marketing. In general, IT can role as mediates in transaction is labeled in different ways. However, this study come out to adopt Business to Business e-commerce (B2B EC). Moreover, there are several variables have been examined, less attention has been

given to explore the moderating role of trust. The role of these factors has been overlooked in literature. This is because they have been disregarded by the widely used innovation theories and frameworks such as DOI theory and TOE framework (Mohtaramzadeh, Ramayah, & Jun-Hwa, 2018; Pan, 2013). However, whereas some scholars agreed that the influencing variables may differ according to the potential adopter's status in the channel, the discrepancies in the perspectives of two sides of B2B E-commerce received surprisingly little attention in prior research. Hence, revisiting DOI theory and TOE framework by taking a closer look at the moderating role of the relationship characteristics Trust and examining the differences in the perspectives of the two sides of B2B E-commerce, could explain a part of the inconsistencies in prior research. In prior research, trust have been investigated research as motivational factors, but limited support has been reported (Ocloo, Xuhua, Akaba, Addai, Worwui-Brown, & Spio-Kwofie, 2018). While the motivational role of trust is not well pronounced in prior research, an alternative view is to consider trust as factors that facilitate or inhibit (moderate) the role of other motivational factors instead of considering them as motivational factors themselves. The view expressed above is in line with recommendation from Hamad, Elbeltagi, and El-Gohary, (2018) argue that because adoption of B2B E-commerce transpires simultaneously between two autonomous organizations bound in a symbiotic relationship, the adoption of this technology is contingent upon the nature of relationship between trading partners including trust. Furthermore, Krishna, and Singh, (2018), suggest that future research should explore the extent to which the structure influences the adoption behaviors.

Responding to the above call from prior research, this study draws upon Resource Dependency Theory (RDT) to demonstrate the moderating role of trust. It sheds the light on the role of as trust variable (Mrabet, 2018). It provides two possible roles of trust (Kabanda, & Brown, 2017). On the one hand, because trust entails an element of uncertainty, dependent companies will seriously seek to reduce and to manage these uncertainties by engaging in inter-organizational arrangements such as adopting B2B E-commerce (Musbah, & Kartiwi, 2017). On the other hand, since adoption of B2B E-commerce requires adequate level of power to induce trading partner's participation, a dependent companies is in the worse position to do so successfully due to its lack of power and to the limited control it has over its decision-making.

Keeping in mind the above possibilities, it can be argued that a high level of trust acts as an amplifier to the role of appropriateness related factors (TOE factors). Specifically, appropriateness related factors coupled with the serious need to manage and to mitigate uncertainty surrounding vital resources encourages dependent companies to adopt B2B E-

commerce. Alternatively, it is also plausible to argue that a high level of trust acts as an inhibitor to role of appropriateness related factors. Particularly, appropriateness related factors coupled with restrictions in scope and latitude of decision-making will constrain the role of appropriateness related factors in motivating companies to adopt B2B E-commerce. With regard to the moderating role of trust, (Kabanda, & Brown, 2017) argue that trust has two possible effects on behavior (i.e. adoption behavior). These include direct and moderating effects. They emphasize that when trust has a moderating effect on behavior, it will guide the potential adopter to selectively perceive and interpret factors that have a direct effect on behavior. Villa, Ruiz, Valencia, and Picón, (2018) argue that, the presence of some factors may be necessary, but they are insufficient by themselves to drive e-commerce adoption.

Recent studies have found that trust per se does not play a significant direct role on the decision to adopt (Villa, Ruiz, Valencia, and Picón, 2018). Therefore, trust may be better understood as a variable that influences how potential adopter directs its motivation to adopt B2B E-Commerce. To provide further clarification about this argument, DOI theory and TOE framework suggest that adoption behavior is driven by motivational factors that are technological, organizational, and environmental but not by trust. In this case, it is suggested that trust directs the motivation towards reaching decision to adopt as it provides information about the advisability of engaging in particular joint-action behavior (i.e. B2B E-commerce adoption). Therefore, high level of trust between trading partners can reduce the expectancy of opportunistic behavior; it also reduces the degree of uncertainty on B2B E-commerce adoption when it is considered as an appropriate choice. Another important issue in the literature, however, is the differences in the perspective of marketing and purchasing departments regarding B2B E-commerce adoption. Chwelos et al. (2001) report that both sides of B2B E-commerce could have different views on the adoption of B2B E-commerce. Esmailpoor, Hoseini, and Jafarpour, (2018) have found that adoption of B2B E-commerce could have repercussions on existing structure of relationship between trading partners. For example, in many cases, adoption of B2B by buyer could result in a major shift in bargaining power to their supplier. Hence, the determinants of B2B E-commerce adoption could be different in view of marketing and purchasing departments. Therefore, this study attempts to accommodate both perspectives to determine whether the perspectives differ. Prevailing empirical research does not provide conclusive evidence regarding the aforementioned issues. Whether trust moderate the relevance of different TOE elements, is still an unanswered question. Moreover, differences and similarities in the two perceptions of B2B E-Commerce with respect to the determinants of

B2B E- commerce adoption are still uncovered. Those issues merit further study; therefore, this thesis extends the previous studies by answering those questions. If B2B E- commerce enables organizations to achieve several competitive advantages and is a tool necessary for managing challenges in the global economy, the low level of adoption of B2B E- commerce raises concerns about determinants that motivate companies to adopt this technology. It also raises questions about factors that may prohibit or facilitate these motivations. As shown in the foregoing reviews, the fundamental research problem lies on one broad research question “From marketing and purchasing perspectives, do relationship-related factors trust moderate the effect of technological, organizational, and environmental factors on the firm’s intention to adopt B2B E- commerce”. Therefore, the specific research questions for this study are as the following: 1. What is the relationship between technological factors and adopt B2B E-Commerce among libyan companies managers? 2. What is the relationship between, organizational factors and adopt B2B E-Commerce among libyan companies’ managers? 3. What is the relationship between environmental factors and adopt B2B E-Commerce among libyan companies’ managers? 4. Does trust moderate the relationship between technological factors and adopt B2B E-Commerce among libyan companies’ managers? 5. Does trust moderate the relationship between organizational factors and adopt B2B E-Commerce among libyan companies’ managers? 6. Does trust moderate the relationship between environmental factors and adopt B2B E-Commerce among libyan companies’ managers?

II. Adopted Variables In The Study

III. Technological Factors and The Relationship B2B E-Commerce

Relative Advantage refers to the expected advantages that B2B EC can provide the organization. These include cost reduction, faster decision-making, reduced marketing time, increased efficiency and productivity, as well as others (Hussein, Baharudin, Jayaraman, & Kiumarsi, 2019). Theorists argue that the benefits obtained from adopting innovation are the key factor in order to adopt innovation (Mohtaramzadeh, Ramayah, & Jun-Hwa, 2018). According to the Diffusion Innovation Theory, potential adopters will implicitly or explicitly carry out cost-benefit analyses. They will adopt innovations that reduce greater returns than the method used previously.

This study anticipates that if companies’ managers view B2B EC as likely to produce greater benefit, they are more likely to adopt it. This leads to the following hypothesis:

Hypothesis1: *Technological factors (TF) leads to greater intention to adopt B2B E Commerce (B2B E-C).*

IV. Organizational Factor and The Relationship B2B E-Commerce

Organizational Readiness refers to the ability of a companies to successfully adopt, use and benefit from information technologies (Mrabet, 2018). Adoption of B2B EC technology requires adjustment in the organization, workforce, process and structure (Nather, Burhanuddin, Sek, Ali, 2020). In order to adopt B2B EC in an appropriate manner, it is essential for the companies to ensure that there is an alignment between the nature of the technological change and the firm's. focus on two concepts in the process by which Organizational Readiness affects the decision to adopt B2B EC.

In this manner, companies that have a greater degree of technological preparedness are better positioned to adopt B2B EC technologies. Therefore, Organizational Readiness as a construct composed of financial resources and IT sophistication is a key fundamental factor that represents the potential resources required to adopt B2B EC. This leads to the following hypothesis:

Hypothesis2: *Organizational factors (OF) leads to greater intention to adopt B2B E Commerce (B2B E-C).*

V. Environmental Factors And The Relationship B2B E-Commerce

Pressure from competition refers to the stress created by the threat of losing competitive advantage. This stress urges companies to adopt B2B E-C (de Matos, & Krielow, 2019).

Adoption of new technology can affect business environment, alter the rules of competition, and leverage new ways to outdo rivals. It can also change the competitive landscape (Alsaad, Mohamad, Taamneh, & Ismail, 2018). Competition Pressure forces companies to offer faster responses to customer demands, shorter lead times, and a greater degree of customization (Ocloo, Xuhua, Akaba, Shi, & Worwui-Brown, 2020). Toward this end, companies should adopt, integrate, and reconfigure internal and external processes to match the requirements of the rapidly changing environment. Adopting B2B EC technologies allows companies to establish tighter connection and integrate its processes with its downstream and upstream partners. In other words, B2B EC is viewed by many companies as a formal business process innovation which enables them to achieve competitive advantage over rivals.

As long as businesses operating in a competitive environment, they will seek to invest in new technology in order to gain competitive advantage over their rivals. It has been suggested that the diffusion rate of B2B EC is high in a highly competitive environment. Therefore, this work formulates the following hypothesis:

Hypothesis 3: Environmental factors (EF) leads to greater intention to adopt B2B E Commerce (B2B E-C).

VI. The Moderating Role of Trust And The Relationship B2B E-Commerce

Trust refers to the willingness of one company to have confidence in and rely on a trading partner. It exists when one party strongly believes in reliability and integrity of the trading partners. Researchers stress that inter-organizational interaction relies heavily on a high level of trust (Eneizan, Alsaad, Abdelbaset Alkhawaldeh, & Rawash, 2020). They also argued that building a good buyer-supplier relationship is more important than building sophisticated technologies alone. Researchers also confirm that B2B EC may not succeed without trust. A vast body of literature have pointed trust as a variable that directly affects adoption of B2B EC (Sarmad, Ahmad, Khan, Irfan, & Atta, 2020). For many of the adoption studies, the evidence for the predictions of a direct effect is not robust: recent studies confirm that trust plays insignificant direct role in adoption decision Al-Ghraibah, (2020) suggest that trust may also play a moderating role in B2B EC adoption. The moderating role of trust has been relatively unexamined in empirical research but it has attracted considerable theoretical attention in conceptual works.

Furthermore, the existence of trust between trading partners allows a potential adopter to invest all necessary resources into the adoption process. This is because the potential partner does not have to cater for a possible let-down for exploitative situation. This leads to the formulation of the following three hypotheses:

Hypothesis 4: Trust (T) moderate the relationship between Technological factors (TF) and adopt B2B E-Commerce (B2B E-C) among libyan companies' managers?

Hypothesis 5: Trust (T) moderate the relationship between Organization factors (OF) and adopt B2B E-Commerce (B2B E-C) among libyan companies' managers?

Hypothesis 6: Trust (T) moderate the relationship between environmental factors (EF) and adopt B2B E-Commerce (B2B E-C) among libyan companies' managers?

VII. Study Methodology and Framework

In order to develop the research framework, this study relied on widely used theories and models in adoption research, namely; DOI, RDT and TOE framework. Both TOE framework and DOI emphasize the role of technological, organizational, and environmental motivated factors on innovation adoption.

TOE framework and DOI do not take into account relationships-related factors Trust (Baabdullah, Dwivedi, & Williams, (2013). An additional insight brought forward by RDT is the role of relationship context, including trust. However, despite the importance of such variables, there is little consensus on how to model the influence of trust in B2B EC adoption models. Although prior research has identified trust to be directly affecting the decision to adopt B2B EC, scholars reported that, these factors might play facilitating role by enabling the role of other motivational factors. In response to this, this study has incorporated the role of trust as moderators in the proposed framework, as it is expected that, the moderating role of both will enhance the predictive and explanatory power of TOE adoption models and produce results that will be useful to academicians and practitioners. Figure 1: depicts the proposed Study framework.

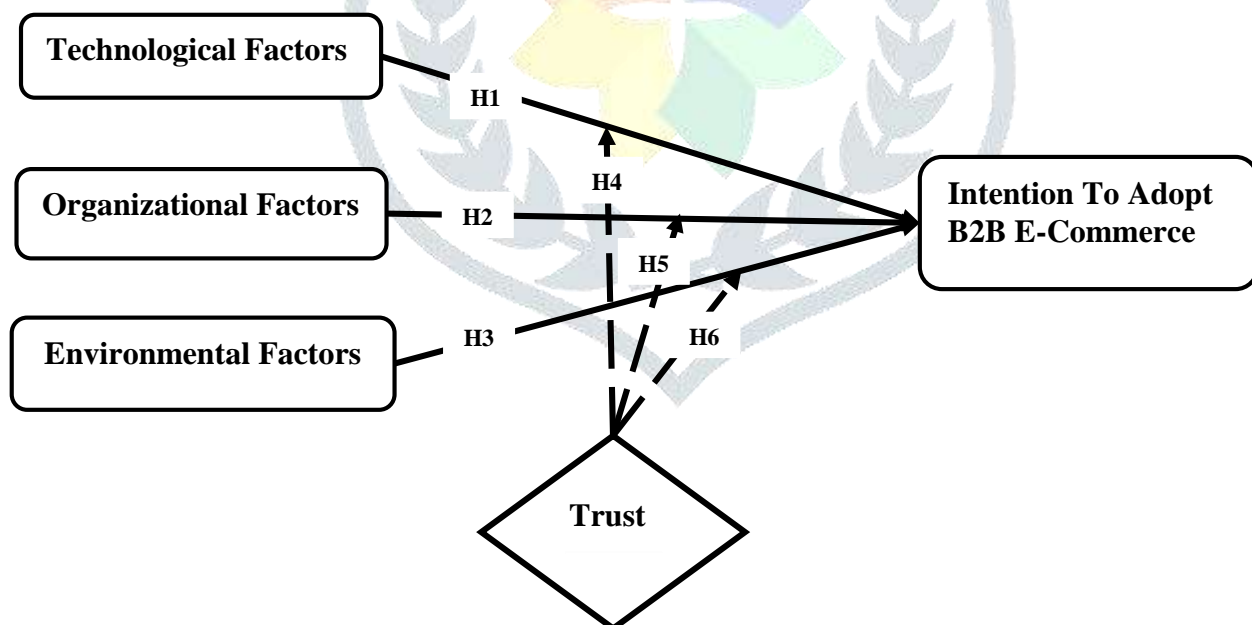


Figure 1. The proposed Study framework

VIII. Nature of Study

Research can be an exploratory, descriptive or hypotheses-testing. An exploratory research is undertaken to explore a new area of research, while descriptive research attempts to describe

certain characteristics of a phenomenon. By contrast, hypotheses-testing studies focus on examining the variation in the dependent variables (Sekaran & Bougie, 2010). The type of study carried out depends on the objective of the research. As study focuses on predicting the factors that significantly account for variance in an organization's intent to adopt B2B EC thus, it can be classed as a hypothesis testing study.

IX. Unit of Analysis

This study attempts to understand the company's intention to adopt B2B EC with its key customer and supplier to determine whether their perspectives differ. Toward this end, this study analyses each perspective separately. However, as a unit of analysis is the unit to which data are assigned for statistical analysis and hypothesis testing (Rousseau, 1985), each perspective is considered as a separate unit.

X. Population and Sampling Procedures

This study focuses on companies' intention to adopt, thus eligible companies are those that are currently non B2B EC adopters. The qualifying companies for studying B2B EC require massive transactions and high experience in supply chain and channel management point out that companies with large number of employees, high registered capital, and high sale turnover would be more likely to have these attributes.

In the first stage, the researcher searched for the companies that have capital size between LYD 5,000,000 and LYD 10,000,000. In the second stage, the researcher searched for companies that have capital size of more than LYD 10,000,000. Accordingly, the directory was containing 33 companies. This directory also contained duplicate records and records relating to non-active companies. The researcher has filtered the list to include only working companies and removed the duplicate records. This process reduced the sample companies to 33 In Table 1: List of companies.

Table 1: List of companies

Name	Industry	Headquarters	Founded
Afriqiyah Airways	Consumer services	Tripoli	2001
Agricultural Bank of Libya	Financials	Tripoli	1957
Air Libya	Consumer services	Benghazi	1996
Air One Nine	Consumer services	Tripoli	2004
Alajnihah Airways	Consumer services	Tripoli	2006

Name	Industry	Headquarters	Founded
Arabian Cement Co.	Industrials	Al Khums	1988
Arabian Gulf Oil Company	Oil & gas	Benghazi	1979
Banque Sahélo-Saharienne pour l'Investissement et le Commerce	Financials	Tripoli	1999
Brega Marketing Company	Oil & gas	Tripoli	1974
Buraq Air	Consumer services	Benghazi	2001
Central Bank of Libya	Financials	Tripoli	1956
General National Maritime Transport Company	Industrials	Tripoli	1975
General Posts and Telecommunications Company	Telecommunications	Tripoli	1984
Ghadames Air Transport	Consumer services	Tripoli	2004
Jowfe Oil Technology	Oil & gas	Benghazi	1983
Libya Telecom & Technology	Telecommunications	Tripoli	1997
Libyan Airlines	Consumer services	Tripoli	1964
Libyan Arab Air Cargo	Industrials	Tripoli	1979
Libyan Cement Company	Industrials	Benghazi	1972
Libyan Foreign Bank	Financials	Tripoli	1972
Libyan Iron and Steel Company	Basic materials	Misurata	1979
Libyan Jamahiriya Broadcasting Corporation	Consumer services	Tripoli	1969
Libyana	Telecommunications	Tripoli	2004
National Oil Corporation	Oil & gas	Tripoli	1970
Oilibya	Oil & gas	Tripoli	2008
RASCO	Oil & gas	Ra's Lanuf	1983
Sahara Bank	Financials	Tripoli	1964
Sirte Oil Company	Oil & gas	Brega	1981
Technofarm International	Consumer goods	Tripoli	2000
Trucks and Bus Company	Industrials	Tajura	1976
Umma Bank	Financials	Tripoli	1907
Waha Oil Company	Oil & gas	Tripoli	1956
Western Libyan Gas Project	Oil & gas	Tripoli	2004
Zawia Oil Refining Company	Oil & gas	Tripoli	1976

XI. Result Of Testing Hypotheses

Table 1: presents a summary of the results from the model. In the first step, the main effect has been tested separately without moderator. As indicated in the Table 2: the first hypothesis, technological factors (TF) and B2B E-Commerce is positive and significant thereby providing support for H1. In addition, the relationship between organizational factors (OF) on B2B E-Commerce is positive and significant this is providing support for H2. In addition, the relationship between environmental factors (EF) and B2B E-Commerce is positive and

significant this is providing support for H3. Furthermore, the moderation role of Trust (T) the interaction model has been initiated. As shown in Table 1, the result has confirmed that one of the hypotheses has been positive and significant, which is H4. Moreover, H5 the moderating role of Trust (T) between OF * T -> B2B E-Commerce . furthermore H6. EF * T -> B2B E-Commerce We're not significant.

Table 2: Results of hypotheses

No,	Hypothesis	Path Coffecient	Standard Error (STERR)	T.Value	P. Value	Decision
H1	<i>TF -> B2B E-C</i>	0.576	0.374	.1238	.0141	Supported
H2	<i>OF-> B2B E-C</i>	1.436	0.375	3.464	0.100	Supported
H3	<i>EF-> B2B E-C</i>	0.353	0.306	3.577	0.011	Supported
H4	<i>TF * T-> B2B E-C</i>	-0.790	0.441	1.176	0.131	Supported
H5	<i>OF* T -> B2B E-C</i>	0.432	0.374	0.678	0.482	Not Supported
H6	<i>EF* T -> B2B E-C</i>	-0.143	-0.543	1.759	0.442	Not Supported

Note. *p < 0.1; **p < 0.05; *** p < 0.01

XII. Theoretical Implications

By distinguishing the two sides of B2B, the objective was to deepen and differentiate our understanding of the determinants of B2B EC's diffusion. Meanwhile, testing the TOE framework under the context of Trust was designed to capture the constraints and opportunities that may affect the meaning and occurrence of adoption behavior as well as functional association between underlining variables. Hence, incorporating Trust as moderators into the TOE framework, makes our understanding of the relationship between TOE factors and adoption intention, more sensitive to the context of relationship between trading partners.

XIII. Conclusion and Future Works

In addition to companies, managers need to weigh the appropriateness of B2B EC to ascertain technological characteristics (e.g., Relative Advantage and complexity) Coronavirus Disease

(COVID-19), as suggested by our empirical findings. This implies that managers should not be deceived by paybacks of B2B EC, unless they confirm that it is well understood and compatible with their operational business environment. Therefore, managers should be more proactive in evaluating B2B EC to make sure that B2B EC is an appropriate choice.

The results also seem to suggest that managers of B2B relationships should focus their attention on the nature of relationship with their supply chain partners, when planning to adopt B2B EC in Coronavirus Disease (COVID-19). Moreover, Managers on marketing side should realize that business customers are more affected by characteristics of the relationship. They should focus on building strategies to minimize uncertainties inherent in high level of trust. Moreover, as trust increases the influence of adoption Complexity on purchasing side, managers on marketing side should provide incentives and encouragements to their business customers in order to minimize the Complexity of B2B EC adoption.

With the proliferation of studies in recent years, a very large number of variables have been discussed in the literature to explain B2B EC adoption; resulting in a good deal of inconsistency in findings. In an effort to understand the conflicting conclusions regarding the impact of these variables, this study proposes two contingencies on the influence of TOE factors, Trust. In addition, this study investigates the differences and similarities in the two sides of B2B EC with respect to the adoption determinants. The analysis of surveyed data showed that, marketing side and purchasing side do have slightly different performance during Coronavirus Disease (COVID-19).

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