SYSTEMATIC LITERATURE REVIEW OF E-COMMERCE IMPLEMENTATION STUDIES

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ABSTRACT

E-Commerce implementation is a crucial process for organization to make it successful and beneficial. As a consequence, intensive research works in the area of e-Commerce implementation from a diverse range of views and findings have been studied by many researchers. However, the aspect of Business-to-Customer (B2C) e-Commerce implementation has yet been undertaken in an understandable manner in the context of a full life cycle of information systems development. This paper provides a systematic literature review of existing research studies on e-Commerce implementation to discover the extent focus of work based on theme in the implementation phases: pre-implementation, during implementation and post implementation. Sixty five (65) selected primary research studies have been analysed on the basis of implementation phase theme, research approach and research area. The results show that majority papers discussed B2C e-Commerce in the pre-implementation phase (49%) and applied quantitative approach (63%) as the most popular research method. Two other implementation phases namely during implementation phase and post implementation phase has not been sufficiently addressed in the existing literature. Furthermore, existing literature have significantly addressed factors related to e-Commerce implementation but were not mapped to the appropriate implementation phases. These factors list remains on surface without clear direction in which e-Commerce implementation process is crucial for organizations. Thus, through a systematic literature review this study suggests that more research is needed for understanding the complex process of e-Commerce implementation in a more holistic manner. In addition, there is a need for study to screen these factors to a particular and more accurately "map" in the process of e-Commerce implementation.

Keywords: *e-Commerce, e-Commerce Implementation, Implementation Phase, Systematic Literature Review*

1.   INTRODUCTION

The benefits to companies that succeed in Business-to-Customer (B2C) e-Commerce are compelling. Effective B2C e-Commerce implementations can help organizations realize substantial cost savings, increase revenue, provide faster delivery, reduce administration costs, and improve customer service. Thus, e-Commerce is a significant area for research because of its novelty and exploding growth [1]. Extensive research in e-Commerce implementation studies indicates that the definition of implementation has been argued and confusing for researchers. However, in this paper we adhere with the definition given by [2], as a full implementation process which includes all three phases; pre-implementation, during-implementation and post-implementation.

There is an obvious need for novel approach and solutions strategies to curb the barriers in e-Commerce implementation studies. Enhancing our understanding of activities and factors associated with e-Commerce implementation could direct these future strategies and understanding. Therefore to guide future e-Commerce implementation efforts, this systematic literature review (SLR) will seek to answer the questions, "What are the present state of e-Commerce implementation studies?" and "What are the nature of the studies?"

The structure of this paper is as follows: Section Two devoted the background of e-Commerce implementation and motivation for SLR. Then, section Three summarizes the SLR methodology, including the inclusion and exclusion criteria, and classification method on e-Commerce implementation themes. Section Four presents the

results and discussion of the research, outlines the distribution of articles by year and tabulates a synthesis of the results of the SLR by themes. Section Five refers to our recommendations and discussion, including issues that we consider to be the keys for e-Commerce implementation studies. Finally, Section Six presents the limitation of this study and summarize the paper.

2. BACKGROUND AND MOTIVATION

E-Commerce implementation studies are always related to e-Commerce adoption [3-5]. Adoption of e-Commerce within organization is growing by numbers continuously. However, as organizations grow over time, e-Commerce becomes more complex and challenging. This is mainly due to organizations insights of e-Commerce as part of their constrained costs rather than an opportunity for growth. [2] pointed out that cost in general is not a main barrier for organizations to implement e-Commerce, but, the relative advantage for the organizations is critical role in adoption decision. Moreover, organizations fail to identify the change in organization and management structure that may be required due to e-Commerce implementation as they do not usually incorporate any e-Commerce strategy that would permit them for effective e-Commerce implementation. According to [6, 7], in enabling the success of the whole e-Commerce implementation, the process in implementation cannot be divided. Additionally, they suggest a more up-to-date and comprehensive representation of the implementation process. This representation would view the entire implementation as a holistic system, rather than breaking it into components. Therefore, there is a need for insights of e-Commerce implementation studies for the organizations within business firms to understand the current research. In achieving this, we intended to do systematic review with evidence-based (i.e., from data of previous studies) for uncover the insight of e-Commerce implementation area.

3. RESEARCH METHODOLOGY

Figure 1 shows the selection process of the articles extraction. First, we performed automatic searches using the search engines of electronic databases which are ProQuest, Emerald, Springer Link and Science Direct. We have applied a relevant set of keywords and phrase such as 'e-Commerce implementation', 'electronic commerce implementation',' implementation of e-Commerce', 'implementation of electronic commerce', 'B2C e-

Commerce implementation' and 'business to customer e-Commerce implementation'. These keywords search are limited in extent to the title, abstract and keywords search archives published between the year 2006 and current year 2015 as in month of June, 2015. The database search has returned a total of 196 publications. Besides that, we have conducted backward-forward search from the reference lists of other most relevant and good quality reviews of e-Commerce implementation studies previously done. Then, we have filtered the publications to only full text access and written in English only. Finally we obtained a total of 128 publications.
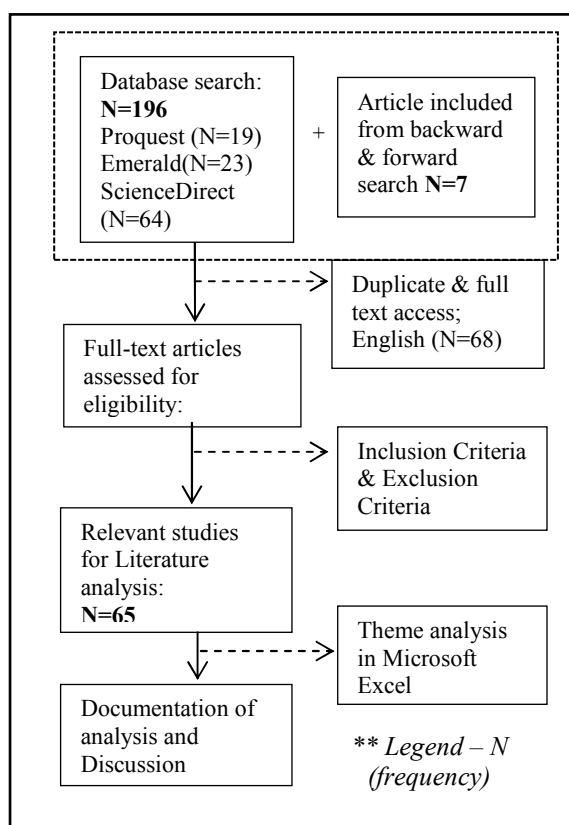

Figure 1. Selection Process of Articles Extraction

Next, we narrowed down the full text publication based on the Inclusion and Exclusion criteria. Inclusion criteria consists of articles that present the e-Commerce implementation related and within business firms, articles which included or mentioned their research approach and articles that proposed and evaluated research models or frameworks. Meanwhile, Exclusion criteria consists of articles which focus on technical issues such as software evolution or algorithm process, articles which claims are non-justification statement rather

than based on evidence, articles which are only conceptual paper or review paper and duplicates articles. Table 1 shows the Inclusion and Exclusion criteria used in this SLR process.

Table 1. Inclusion And Exclusion Criteria Used For The Study

Inclusion criteria	Exclusion criteria
a) Articles related to e-Commerce implementation written in English. b) Articles which are related to e-Commerce implementation within business firms c) Articles which included their research approach d) Articles which proposed and evaluated research models or frameworks	a) Articles which focus on technical issues such as software evolution or algorithm process b) Articles in which claims are non-justification or ad hoc statement rather than based on evidence c) Studies which are only conceptual papers or literature reviews d) Duplicate articles

Finally, we obtain a total of 65 relevant studies for literature analysis. The literature analysis is based on full text reading and uses Microsoft Excel for systematic records and documentation presenter in this paper (Appendix A shows the summary of main papers in this review). The analysis of each paper is followed with classification schemes which will be discussed in the next section.

3.1 Classification Method

We have used classification method, which are based on the literature reviews, the nature of e-Commerce implementation research and the work of [7] and [2], and e-Commerce classification in the work of [1]. The articles have been classified into three broad themes: i) pre-implementation; ii) during-implementation; and iii) post-implementation, and each are divided into subcategories.

1. *Pre-implementation:* This is an initial change process, thus decision of organization to adopt or not to adopt e-Commerce is critical [7]. This category may include articles that mainly focus on:
a) *Adoption:* This covers articles that discuss about the driving factor for organization to adopt e-Commerce, the comparison of adopter and non-adopter of e-Commerce, and article assigned "adoption" as keyword.
b) *Benefits:* Articles that present the benefits of e-Commerce implementation towards organization.

c) *Readiness:* Contain articles associated with e-Commerce implementation readiness including the top management support on the e-Commerce implementation, the acceptance of organization to implement e-Commerce and the available sources for e-Commerce implementation.
d) *Decision Making:* Studies that present organization decisions for e-Commerce resourced based, e-Commerce planning and in predicting the result for every decision made to make change in the organization.

2. *During-implementation:* This stage is where installing and development of e-Commerce mostly covered, which depends on the system applications whether online publishing, auctions, marketing and advertising or other applications [1,7]. This category includes papers that mainly focus on:
a) *System design:* Studies that present the structure of e-Commerce planning (e.g., the structure of supply chain management and recommender of system structure for organization). Studies that elaborate the web design or customer preference on website design also included in this categories
b) *System strategies:* Presents organization strategies to enhance their performance and recommendation to improve e-Commerce diffusion.
c) *System application:* Studies that discussed the applications provided by organization in the e-Commerce implementation. Example of applications: customer services, online purchasing and payment, usage of email within organization and marketing through social media.

3. *Post-implementation:* Process of diffusing or expanding e-Commerce within the organization as their cultural norms and values [7]. This includes papers that mainly focus on:
a) *System Routinization:* Reporting the organization efforts in maintenance the e-Commerce system (e.g., system reconfiguration)
b) *Assessment:* Organization experience measurement after implement the e-Commerce (e.g., the barriers or challenges and the success factor for e-Commerce implementation).
c) *Performance and Business impact:* Impact of e-Commerce implementation or the determinant that leads to increase organization performance.

4.   RESULT AND DISCUSSION

Here, we present the data collected according to: i) the e-Commerce implementation articles publication growth between years 2006 to 2015; ii) the distribution of studies by theme; iii) the research approach; and iv) the area of research domain.

4.1   Growth of Publication

Figure 2 shows the growth of publication of research papers between years 2006 to 2015 in the area of e-Commerce implementation studies. The pattern had been increasing from year to year, from 2006 to 2012 except for a fall in 2010 and started to increase again for the following year reaching to peak in 2012 with 11 publications. Then, there was a significant decrease from the year 2013 until 2015. In year 2015, it is expected to be low as some articles are not in full text access yet or in next publication issues. It is expected to moderately increase in the latter part of the year.
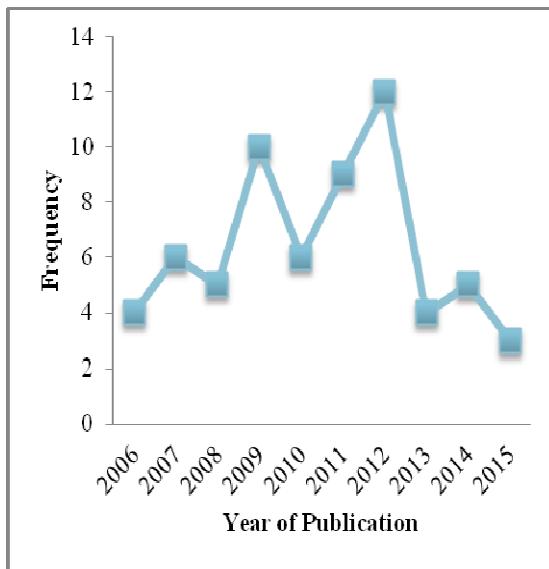

Figure 2. Growth Of Publication

4.2   Distributions of Articles by Theme

The distribution of articles by themes is shown in Figure 3. The most commonly published research theme is in the pre-implementation (49%) while the least is on the post-implementation (23%). As far as the research sub-theme is concerned, adoption studies are in vast majority, covering 29% of the current research. On the other hand, system routinization has been addressed as small percentage of 3%.
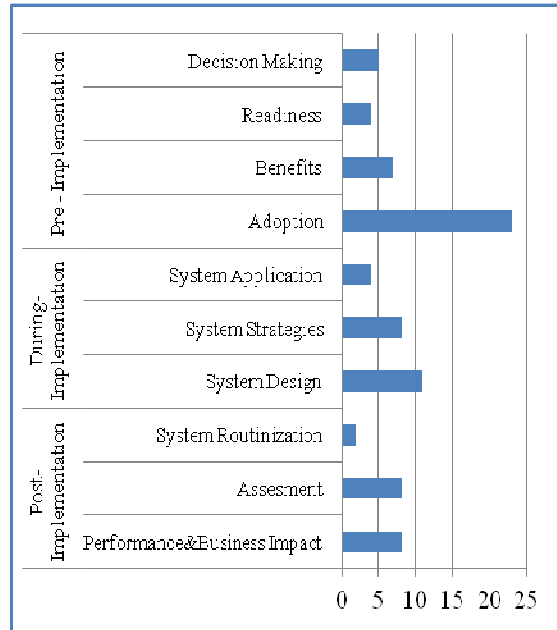

Figure 3. Distribution Of Articles By Theme

Here, we elaborate important themes within the division of e-Commerce implementation studies:

4.2.1   Pre-implementation phase

i)   Adoption

The adoption theme may include the driving factor for organization to adopt e-Commerce and the comparison of adopter and non-adopter of e-Commerce. Factors affecting e-Commerce adoption have been highlighted in most of studies at this pre-implementation phase e.g., [8-12]. Although these studies objectives are relatively in line with each other (i.e., to measure factors affecting e-Commerce adoption), however, the significance of the factors varies from one research to the other. For instance, [10] analysis has shown that environmental factors (i.e., customer pressure, access and quality of ICT consulting services) in Southern Italy are significant in e-Commerce adoption both in Australia and Denmark. Contrary, [13] analysis have differed view from the two case studies in Australia and Singapore. Similar with [10] study within Australian firm, Australian experience external environment related to customer pressure, supplier pressure and perceived government support are exclusive related to adoption. However in Singapore, the environment related, size of firm and perceived readiness are found to be a unique factor. This confirms the views of different countries are different towards adoption and implementation of e-Commerce. This is similar with [14] studies on the identification of differentiation characteristic of design features in

different countries. In addition, top management support is the most crucial actor in organization through whole adoption of e-Commerce [12]. The common contribution from these studies is conceptual model in term of making classification for factors that trigger e-Commerce implementation.

ii)   Benefits

Second theme which receives much attention in this phase is benefits. Despite the organizational potential of e-Commerce, operational and strategic benefits might remain beyond the reach of most small to medium-sized organizations. Organizations which approach the e-Commerce effort from a mere technology perspective might end up with isolated islands of automated marketing related activities [15]. In addition, in the study by [16] which compared between traditional approach and net system approach as marketing strategies of organization, found that net system approach is proven to be economically feasible and less risky with respect to the traditional approach. Moreover, net system approach is more impartible in distribution of benefits and effective in stimulating the local economy as a whole system.

iii)   Decision Making

The third crucial theme in the pre-implementation phase is decision making. This theme presents organization decisions for e-Commerce resourced based, e-Commerce planning and in predicting the result for every decision made to make changes in the organization. For instance, a study by [17] has emerge with the development of framework to ensure the type of e-Commerce partnership is on track based on the volume of transactions (i.e., low vs high) and complexity of transactions (i.e., simple vs complex). In doing this, [17] has claimed that decision maker is a crucial person to give direction for e-Commerce to move to another step during its process. This person must also ensure that the implementation of e-Commerce does not only receive support from the strategic level, but throughout the provision of information access, which would make it possible to reap operational benefits and support cooperative partnership [18].

iv)   Readiness

The least theme in the pre-implementation phase is readiness. Readiness of organization to implement e-Commerce is related with the acceptance of organization and customer. [4] explored organization e-readiness in term of acceptance intention and degree of implementation of a corporate website from four viewpoints;

technology, management, organization and environment. Their study indicates a significant positive effect on the intention to accept e-Commerce with mentioned dimensions as stated. Parallel finding from [19] studies have proven that technology and organization dimension affect e-Commerce success. The contingent nature of study's findings for this theme will include technology and organization in measuring the readiness of organization and thus will affect the degree of implementation of e-Commerce.

4.2.2   During-implementation phase

i)   System Design

The highest theme on e-Commerce implementation in the during-implementation phase is system design. Many studies on this theme have looked into the structure of e-Commerce applications and have also elaborated the customer preference on website design. For instance, [14] has developed a B2C e-Commerce website design features in different countries based on evaluation of participant from Australians and Koreans' favourite site. The global site based in USA provided similar design features to the Australian site that looks relatively simple except display of local products and images. Contrary, Koreans' favourite sites features more collective such as use of multiple menus and contents contained various types of information, products promoted for shopping and community communication tools. Besides, large number of studies that contributed to framework design and model design [20-22] for e-Commerce system leads to the highest theme discussed in the during-implementation phase.

ii)   System Strategies

Second theme which receives much attention at this phase is system strategies. This includes those studies that present organization strategies to enhance their performance and recommendation to improve e-Commerce diffusion. For instance, [22] have proposed a model that provides how to generate e-Commerce value. Their study shows that the business resources (e.g., innovation capacity, market orientation and strategic flexibility) impact on e-Commerce capability which contributes significantly to the organizational performance. In another study, [23] have explored five key themes in e-procurement strategies, namely system specification, implementation management, changes in total acquisition costs, changes to governance structures and changes to organizational characteristics.

iii)   System Application

The least theme on e-Commerce implementation in the during-implementation phase is system application. Implementing e-Commerce in organization allows varies application happen on the Internet. Besides purchasing and selling product, email is the one of the first applications to run on the Internet and involves the direct transmission of text messages between two users. Email is still the most actively used by e-Commerce organizations to correspondence between buyer and seller [12,24]. The usage of email provides the simplest form of e-Commerce applications (e.g., B2C, B2B) which maintains the business relationship with other parties.

4.2.3   Post-implementation phase

i)   Performance & Business Impact

Performance and business impact theme has received much attention in the post-implementation phase. The theme may include series of critical success factors (CSFs). For instance, [25] in their study have identified some CSFs from organization perspective namely supplier and contract management, information and system infrastructure and end-user behavior. From technology perspective, supporting of e-Commerce business law, data security and privacy, cyber-crime concern, and e-Commerce integrating capabilities contribute to performance of e-Commerce [26]. Whereas, a study carried out by [6] has identified different factors from varied perspective that affect the success of e-Commerce, namely organization, management, leadership, strategy, customer, IT, website functions and customer oriented functions.

ii)   Assessment

Following the performance and business impact theme in the post-implementation phase is assessment. Assessment in e-Commerce implementation involves the use of empirical data to improve the system. Often, barriers and challenges have been raised to refine the systems. Two main barriers have been discovered in a study of [28] which are technical problem and cost, considered as two different approaches to deal with. Especially technology issues related to security is a main challenge in both pre and post implementation phases [29]. Organizations would rather have short-terms goal in daily basis operation instead of long-term goal thus limit them in expansion of business strategies including e-Commerce application. Finally, in term of cost or investment decisions, SMEs have higher risk of failure than in larger companies [28,29]. Therefore, a critical decision making is very crucial for SMEs. Many other barriers have been reported on these studies yet not

many solutions have been offered, namely culture, power, sales and marketing as well as complexity of e-Commerce system [15, 30-32]. Thus, this gives some limitation on this theme.

iii)   System Routinization

The least discussed theme in the post-implementation phase is system routinization. E-Commerce implementation leads to organizational change and the level of coping the change lead to higher possible for e-Commerce into organization routinization. [30] research draws attentions to the factors that facilitate the processes of routinization and institutionalization over time in TexCo, a first B2B e-Commerce of textile firms in Egypt. The study highlighted factors of the system's simplicity, the users' satisfactions with their new embedded rules, the participation of the accountants in the design and modification of the new system, monitoring the implementation of the new routines and resolving the problem which TexCo was encountering. Meanwhile a case study conducted in the largest Chinese home appliance manufacturers state that routine reconfiguration, as the process of strategy implementation, enriches and helps organizations to implement e-Commerce strategies and indicating the strategic value of including implementation approaches into traditional companies' e-Commerce strategies [33].

4.3   Research   Approach   on   e-Commerce Implementation Studies

Table 2 presents the distribution of research approach and methodology applied on e-Commerce implementation studies. It shows that e-Commerce implementation studies in all pre-implementation, during implementation, and post implementation themes preferred quantitative approach (64%) using survey methods. There are various methods of studies to deliver survey, for instance, [28, 37] in their studies have used email in distributing questionnaire to the participants and have reminded them by telephone calls to ensure higher rate of effective questionnaire.

Meanwhile, online survey is the most common deliverable method than hands in paper survey. Larger number of studies validated their data reliability using Cronbach's Alpha. Cronbach's alpha was calculated to test internal consistency reliability of the survey instrument. It measures the degree to which items are free from random error that may have an effect on the results [22]. On the other hand, consulting and considering the expert of the area is relatively reported in some studies

[11,20,21,26, 31,34] for validating survey items before pilot study being conducted.

On the other hand, qualitative approach covers 30% of selected studies. For instance, [16] studies conducted open-ended interview in their study as their goal was to develop a framework for B2B implementation. The study needs the understanding on the process and what produces an explanation of what led to a successful implementation and what prevented the formation of a successful partnership with other firms. The studies concern "how" e-Commerce being adopted and to describe a complex phenomenon which includes decision making in the organization context as well as

benefits e-Commerce implementation. Thus, qualitative approach applied in his study.

The least used approach in the selected studies is the mixed method which is only 7%. All are equally distributed to each of implementation phase themes. For instance, [13] decided to combine the quantitative and qualitative approach in their studies. To design system features from different culture origin; Australian and Korean (South) based in Australia, firstly, he interviewed the users' preferences of sites including disfavor websites. Then a questionnaire is being distributed after user surfed selected site to test the impact of cultural differences of user preferences

Table 2. Distribution of Research Approach and Methodology Used in e-Commerce Implementation

Research Approach	Research Method	Pre – implementation				During – implementation			Post – implementation			%
		Adoption	Readiness	Benefits	Decision Making	System Design	System Strategies	System Application	Performance & Business Impact	Assessment	System Routinization	
Quantitative	Survey	21	4	4	3	6	6	3	6	7	-	63%
	Secondary data	-	-	-	-	-	-	1	-	-	-	
Qualitative	Interview	2	-	3	3	1	2	1	1	1	2	30%
	Case study	-	-	-	3	-	-	1	-	1	2	
	Secondary data	1	-	-	-	-	-	-	-	-	2	
	Observation	-	-	-	-	-	-	-	-	-	2	
Mixed Method	Interview	-	-	1	-	1	-	-	1	-	-	7%
	Case study	-	-	1	-	-	-	-	-	-	-	
	Secondary data	-	-	-	-	-	-	-	-	-	-	
	Observation	-	-	-	-	-	-	-	-	-	-	
	Focus group	-	-	-	-	-	-	-	-	-	-	
	Survey	-	-	1	-	-	1	-	1	-	-	

4.4 Research Domain on e-Commerce Implementation Studies

Figure 4 shows the distribution of articles in e-Commerce implementation based on their domain (represented by different lines). It shows that studies of e-Commerce implementation are dominated in Business-to-Business domain (49%), followed by studies in Others (21%) and then studies in B2C domain (21%). The remaining (3%) of the studies did not report the domain of study in their papers. The number of study in B2B domain remain higher across all the three implementation

themes except slightly lower in benefits theme. From the literature analysis, most sample in studies are conducted within trading sector (wholesale/retail distribution), service sector and manufacturing sector, thus make this studies categorized in B2B domain. Furthermore, supply chain management, Electronic Data Interchange (EDI) and Enterprise Resource Planning (ERP) are among the famous theme in this domain. Lin et al. (2011) stated that B2B website evaluation is particularly critical since the effectiveness of B2B web sites is often hampered by a lack of standards

for product and services representations and transactions. Therefore, they conducted a study to examine the relationships between the B2B web site adoption readiness, B2B web site adoption constraints, IT investment evaluation, B2B benefits, and the satisfaction with B2B web site adoption.

The choice of study in B2B is predicted to be consistently increased due to the diverse views that emerged from the firms involved in this e-Commerce type.
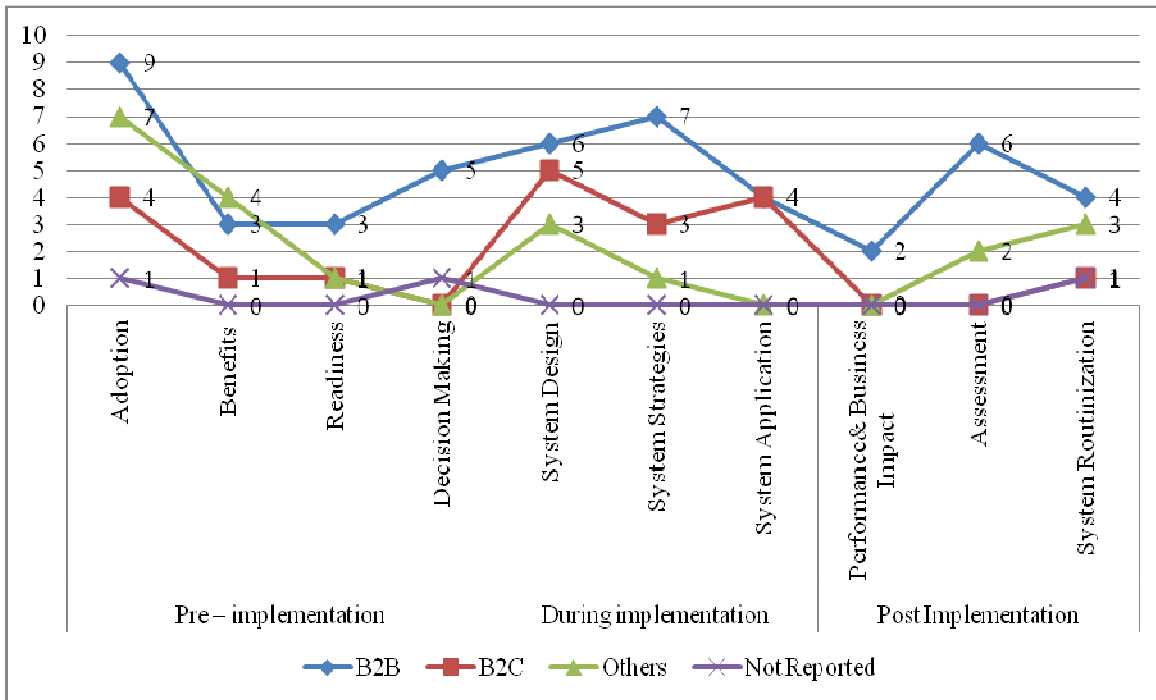

Figure 4. Distribution of Articles Based on E-Commerce Implementation Domain

Other domains, may refer both B2B and B2C or wide sample frame, for example Tourism and Banking organization. For instance, [37] paper is to construct a model for factors that affect on-line customer behavior intentions in banking and travel website in Taiwan. To prevent misunderstanding of the questionnaire, they conducted the pilot study with tourists then conducted the primary study with organizations. In addition, some studies sampling design is very large. For instance, [38] sample frame was obtained from a list of representatives of the entire market in Nigeria to identify major barriers and impediments that exist in regard to implementing e-Commerce. Some studies are based on the geographical area or cross case study, for instance, between Swedish and Australian firms [21] between Australia and Singapore [13] and between Korea and Japan [39].

Additionally, research in B2C domain is relatively lower than other domain. The studies in this domain are mostly focus on system design and acceptance of users of e-Commerce from the

customer perspective. [40], for instance, investigate issues in consumers' acceptance of B2C e-Commerce in Nigeria. An extended Technology Acceptance Model (TAM) with task technology fit, perceived risk and trust was developed and tested using linear regression. These studies suggest that the use of the Internet for B2C e-Commerce depends on usefulness, task fit, and trust. Other studies was to construct a web design for user from different culture and on-line customer behaviour [34, 14] while, studies of [19] obtain resource view of electronic commerce from perspectives of organizations and customers.

Overall, extensive studies have been undertaken in B2B domain focusing on large sample size such in sectors of trading (wholesale/retail distribution), services and manufacturing. Thus, the studies commonly involved participants from organization who are most likely the CEO, Director, General Manager, IT Manager, and Business Manager. In comparison, lower number of studies was undertaken in the B2C domain which, mostly were

focusing on system design and acceptance of e-Commerce. Exploring the B2C domain from organization perspective of whole process of e-Commerce implementation will significantly contribute to advancement of useable research contribution in terms of methodology approach, implementation design and business firms solutions.

5. RECOMMENDATIONS

This SLR on e-Commerce implementation studies has resulted that we have clear implications for future research. Similar with highlight issues in [44], it is now apparent that several potential themes have not been adequately investigated in previous researches. Firstly is on the nature of e-Commerce implementation study. Although the existing studies claim to provide insights for e-Commerce implementation, however, they are unable to provide the entire "picture" of B2C implementation process. For example, it is clear that most studies on e-Commerce implementation were focused on the phase of pre-implementation. Whilst the other two phases, during-implementation and post-implementation have not been sufficiently addressed. Furthermore, this review demonstrates the urgent need of studies for the whole life cycle of implementing e-Commerce applications. Understanding why and how firms manage the activities throughout the process of e-Commerce implementation could be promising research avenue.

Secondly, this review reveals that for almost a decade; the existing studies have enough sufficiency of data related to factors that may affect with the e-Commerce implementation. However, most of the factors were associated with adoption, for instance, driving factors for e-Commerce adoption, critical success factors or challenges or barrier factors in e-Commerce implementation. Nevertheless, none of the studies in the reviews have provided in what extent the organization take into action to provide the solution for these factors. The factors list remains on surface without clear direction in which e-Commerce implementation process is crucial for organizations. With the availability of these factors, it would be possible to screen these factors to specific and more accurately "map" to their respective stages in the e-Commerce implementation.

Finally, and most importantly the results of this analysis have implication for the development of better methods for preventing the ineffectiveness of e-Commerce implementation. In order to understand the complex phenomena of e-Commerce implementation in more precise micro level analysis and to study the relationships between identified factors in a more detailed form, the mixed of qualitative and quantitative methods might be a more effective approach. Overall, we positive that only through better understanding of the complex e-Commerce implementation process and the relationship of underlying e-Commerce implementation factors, it is possible to make more effective and more efficient views of e-Commerce implementation process.

6. LIMITATION OF THE SLR

Intensive research works in the area of e-Commerce implementation from a diverse range of views and findings have been studied by researcher around the nations. Therefore, researchers contribute to thousands of articles published over the electronic database. Hence, to refine these bulky amounts of articles, systematic literature review is clearly the best approach. In this paper, a systematic literature review designed to synthesize the current scientific evidence for e-Commerce implementation process has been conducted. However, there are some limitations for this review. Firstly, since varieties of definition exist for the term of "e-Commerce implementation", this review provides its definition which is limited to the pre-implementation, during-implementation and post-implementation phases. Next, the second limitation is related to the classification of the themes and data extraction process. Since the study had made compulsory to use the key word of "implementation" for all the key word searching strategies, this possibly could be one of the reasons why we only retrieved limited number of articles (i.e., 65). Consequently, the findings can only be presented in four themes (i.e., the growth of publication, the distribution of studies by theme, the research approach employed and the area of research domain), which slightly limited. Lastly, the limitation of database search from four databases which are accessible to the authors in this study might not give a broader view and sufficient related of papers, but, we believe the results do provide reasonable insights into the state-of-the-art of e-Commerce implementation.

7. CONCLUSION

Research in e-commerce implementation can give a significant result. In order to get an overview

of the current research in this area, a systematic literature search was undertaken to identify e-commerce implementation articles from four databases. We have found 65 most related articles after inclusion and exclusion criteria process for obtaining the maximum relevance to our study objectives. The articles were published between 2006 and 2015. The results of this review indicate the e-commerce implementation as a whole process is rather inadequately addressed. Although there are extensive studies of factors in e-commerce implementation, we have found the utmost relevant factors. There are no research efforts, at least in our selected papers, which have actually provided the solution or activities in the e-commerce implementation. Nevertheless we feel that the results presented in this paper have few imperative implications. This study contributes to the first systematic literature review of e-commerce implementation area. Hence the results from this review may assist researchers in the area of e-commerce implementation.

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REFRENCES

[1] Ngai EW, Wat FK. A literature review and classification of electronic commerce research. Information & Management. Vol. 39, No. 5, 2002 Mar 31, pp. 415-29.

[2] Cohen S, Kallirroi G. e-Commerce Investments from an SME perspective: Costs, Benefits and Processes. Electronic Journal of Information Systems Evaluation. Vol. 9, No. 2, 2006 Feb 1, pp. 45-56.

[3] Ren W, Zhang T, Li M. Future Computer, Communication, Control and Automation. Springer Berlin Heidelberg. The Empirical Research of Travelling E-Commerce Implementation Performance Measurement System in China's Star Hotels. Vol. 119, 2012, pp. 407-415.

[4] Hung WH, Chang LM, Lin CP, Hsiao CH. E-readiness of website acceptance and implementation in SMEs. Computers in Human Behavior. Vol. 40, 2014 Nov 30, pp. 44-55.

[5] Yasin M, Augusto M, Czuchry A, Lisboa J. Effect of implementation reasons, implementation plans and system modifications on e-commerce outcomes: a structural equation approach. International Journal of Management. Vol. 27, No. 2), 2010 Aug 1, pp. 303.

[6] Chan C, Swatman PM. B2B e-commerce implementation: The case of BHP steel. Deakin University School of Information Systems; 1999.

[7] Chan C, Swatman P. Management and business issues for B2B eCommerce implementation. InSystem Sciences, 2002. HICSS. Proceedings of the 35th Annual Hawaii International Conference, IEEE. 2002 Jan 7, pp. 3083-3093.

[8] Hong W, Zhu K. Migrating to internet-based e-commerce: Factors affecting e-commerce adoption and migration at the firm level. Information & Management. Vol. 43, No. 2, 2006 Mar 31, pp. 204-21.

[9] Thatcher SM, Foster W, Zhu L. B2B e-commerce adoption decisions in Taiwan: The interaction of cultural and other institutional factors. Electronic Commerce Research and Applications. Vol. 5, No. 2, 2006 Aug 31, pp. 92-104.

[10] Scupola A. SMEs'e-commerce adoption: perspectives from Denmark and Australia. Journal of Enterprise Information Management. Vol. 22, No. 1/2, 2009 Feb 13, pp. 152-66.

[11] Tarofder AK, Marthandan G, Mohan AV, Tarofder P. Web technology in supply chain: an empirical investigation. Business Process Management Journal. Vol. 19, No. 3, 2013 May 31, pp. 431-58.

[12] Teo TS, Lin S, Lai KH. Adopters and non-adopters of e-procurement in Singapore: An empirical study. Omega. Vol. 37, No. 5, 2009 Oct 31, pp. 972-87.

[13] Chong S. Success in electronic commerce implementation: A cross-country study of small and medium-sized enterprises. Journal of Enterprise Information Management. Vol. 21, No. 5, 2008 Sep 26, pp. 468-92.

[14] Kang K. Internationalization, Design and Global Development. Springer Berlin Heidelberg. Supportive web design for users from different culture origins in e-commerce. Vol. 5623, 2009 Jul 19, pp. 467-474.

[15] M. Yasin M, Alavi J, Czuchry A, Shafieyoun R. An exploratory investigation of factors shaping electronic commerce practices in Iran: Benchmarking the role of technology and culture. Benchmarking: An International Journal. Vol. 21, No. 5, 2014 Jul 29, pp. 775-91.

[16] Secco L, Pettenella D, Maso D. 'Net-System'Models Versus Traditional Models in NWFP Marketing: The Case of Mushrooms. Small-Scale Forestry. Vol. 8, No. 3, 2009 Sep 1, pp. 349-65.

[17] Asher A. Developing a B2B e-commerce implementation framework: A study of EDI implementation for procurement. Information Systems Management. Vol. 24, No. 4, 2007 Oct 2, pp. 373-90.

[18] Saffu K, Walker JH, Hinson R. An empirical study of perceived strategic value and adoption constructs: the Ghanaian case. Management Decision. Vol. 45, No. 7, 2007 Aug 7, pp. 1083-101.

[19] Zhuang Y, Lederer AL. A resource-based view of electronic commerce. Information & Management. Vol. 43, No. 2, 2006 Mar 31, pp. 251-61.

[20] Hwang Y. The impact of uncertainty avoidance, social norms and innovativeness on trust and ease of use in electronic customer relationship management. Electronic Markets. Vol. 19, No. 2-3, 2009 Aug 1, pp. 89-98.

[21] Chidambaranathan S, Muralidharan C, Deshmukh SG. Analyzing the interaction of critical factors of supplier development using Interpretive Structural Modeling—an empirical study. The International Journal of Advanced Manufacturing Technology. Vol. 43, No. 11-12, 2009 Aug 1, pp. 1081-93.

[22] Jehangir M, Dominic PD, Downe AG. Digital Information Processing and Communications. Springer Berlin Heidelberg. Technology Resources and E-Commerce Impact on Business Performance. Vol. 189, 2011, pp. 440-447.

[23] Croom S, Brandon-Jones A. Impact of e-procurement: experiences from implementation in the UK public sector. Journal of Purchasing and Supply Management. Vol. 13, No. 4, 2007 Dec 31, pp. 294-303.

[24] Webster M, Beach R, Fouweather I. E-business strategy development: an FMCG sector case study. Supply Chain Management: An International Journal. Vol. 11, No. 4, 2006 Jul 1,pp.353-62.

[25] Cullen AJ, Taylor M. Critical success factors for B2B e-commerce use within the UK NHS pharmaceutical supply chain. International Journal of Operations & Production Management. Vol. 29, No. 11, 2009 Oct 16, pp. 1156-85.

[26] Ahmad I, Agrawal AM. An Empirical Study of Problems in Implementation of Electronic Commerce in Kingdom of Saudi Arabia. International Journal of Business and Management. Vol. 7, No. 15, 2012 Jul 26, pp. 70.

[27] Jinghua HU, Chunjun ZH, Jingting LI. An empirical study on critical success factors for electronic commerce in the Chinese publishing industry. Frontiers of Business Research in China. Vol. 1, No. 1, 2007 Jan 1,pp. 50-66.

[28] Macflregor R, Vrazalic L, Carlsson S, Pratt J, Harris M. Advances in Information Systems Development. Springer US. How Standard Are the Standard Barriers to E-commerce Adoption? Empirical Evidence from Australia, Sweden and the USA. 2006, pp. 483-494.

[29] Sultana R, Lopez JL, Rusu L. ENTERprise Information Systems. Springer Berlin Heidelberg. Barriers to e-Commerce Implementation in Small Enterprises in Sweden. Vol. 219, 2011 Oct 5,pp. 178-189.

[30] Youssef MA. Management accounting change in an Egyptian organization: an institutional analysis. Journal of Accounting & Organizational Change. Vol. 9, No. 1, 2013 Mar 15, pp. 50-73.

[31] Dzazali S, Sulaiman A, Zolait AH. Information security landscape and maturity level: Case study of Malaysian Public Service (MPS) organizations. Government Information Quarterly. Vol. 26, No. 4, 2009 Oct 31, pp. 584-93.

[32] Hadaya P. Determinants of the future level of use of electronic marketplaces: The case of Canadian firms. Electronic Commerce Research. Vol. 6, No. 2, 2006 Apr 1, pp. 173-85.

[33] Chen JE, Pan SL, Ouyang TH. Routine reconfiguration in traditional companies'e-commerce strategy implementation: A trajectory perspective. Information & Management. Vol. 51, No. 2, 2014 Mar 31, pp. 270-82.

[34] Lin WB. Construction of on-line consumer behavior models: a comparative study of industries in Taiwan. International Journal of Commerce and Management. Vol. 18, No. 2, 2008 Jul 31, pp. 123-49.

[35] Abbasi MR, Sarlak MA, Ghorbani A, Esfanjani HA. CSFs of e-commerce admission in small and medium size enterprises (SMEs). African Journal of Business Management. Vol. 4, No. 16, 2010 Nov 18, pp. 3480.

[36] Baršauskas P, Šarapovas T, Cvilikas A. The evaluation of e-commerce impact on business efficiency. Baltic Journal of Management. Vol. 3, No. 1, 2008 Jan 11, pp. 71-91.

[37] Lin C, Huang YA, Stockdale R. Developing a B2B web site effectiveness model for SMEs. Internet Research. Vol. 21, No. 3, 2011 Jan 28, pp. 304-25.

[38] Adalikwu C. Challenges and opportunities in the implementation of electronic commerce: The case of Nigeria. African Journal of Business Management. Vol. 6, No. 46, 2012 Nov 21, pp. 11495.

[39] Kim SW. Organizational structures and the performance of supply chain management. International Journal of Production Economics. Vol. 106, No. 2, 2007 Apr 30, pp. 323-45.

[40] Ayo CK, Adewoye JO, Oni AA. Business-to-consumer e-commerce in Nigeria: Prospects and challenges. African Journal of Business Management. Vol. 5, No. 13, 2011 Jul 4, pp. 5109.

[41] Maswera T, Edwards J, Dawson R. Recommendations for e-commerce systems in the tourism industry of sub-Saharan Africa. Telematics and Informatics. Vol. 26, No. 1, 2009 Feb 28, pp. 12-9.

[42] Kazandzhieva VI. Impact of e-commerce on travel intermediaries in Bulgaria. European Journal of Tourism Research. Vol. 5, No. 1, 2012 Jan 1, pp. 84.

[43] Bordonaba-Juste V, Lucia-Palacios L, Polo-Redondo Y. Antecedents and consequences of e-business adoption for European retailers. Internet Research. Vol. 22, No. 5, 2012 Oct 12, pp. 532-50.

[44] Paris DL, Bahari M, Iahad NA. Exploring Implementation Factors Influencing Business-to-Customer (B2C) e-Commerce. Advanced Science Letters. Vol. 21, No. 5, 2015 May 1,pp. 1455-9.

APPENDIX A: Summarization Of Some Important Papers On E-Commerce Implementation Studies

No	Study	Purpose	Phase	Country Study	Perspective	Methods	Findings
1.	[24]	Examine the tensions created at tier-1 level relating to the adoption of e-Business solutions for B2B activities".	Pre-implementation	UK	Supplier, Retailer	Survey questionnaire, Case study	Technical issues found are; the immature nature of the B2B marketplace and the software available within it; the lack of universal standards for middleware that can integrate internal business processes with e-Business messages and transactions; and a lack of evidence of the ability of B2B software to synchronize supply chains, to improve collaboration or to deliver sufficient return on investment.
2.	[28]	Examine the nature of SMEs and a brief discussion of barriers to e-Commerce adoption	Pre-implementation	Sweden, Australia and USA	Managers	In-depth interviews, Survey questionnaire	The results showed that: (a) for Sweden and Australia barriers could be grouped under two factors, 'Unsuitable' and 'Too Difficult'. For the US a third barrier, termed 'Investment and Security' was required to fully factor the barriers; (b) despite each of the three locations satisfying conditions for classification as regional, the uptake of e-commerce is vastly different from location to location.
3.	[32]	Assess the influence of factors on firms' future level of use of e-Marketplaces.	Pre-implementation	Canada	Senior Managers	Survey	Firms past experience in e-commerce, as well as the factors relating to its business relationships ultimately affect its future use of e-marketplaces.
4.	[8]	Develop a conceptual model for assessing e-Commerce adoption, incorporating six factors unique to e-Commerce	Pre-implementation	USA	Senior Managers	Survey, Telephone Interviews	The variables successfully differentiate non-adopters from adopters. The model demonstrated that web functionalities, web spending, and integration of externally oriented inter-organizational systems tend to be the most influential drivers in firms' migration toward e-commerce. Firm size, partner usage, EDI usage, and perceived obstacles were found to negatively affect e-commerce.

5.	[18]	Examine the link between the factors of perceived strategic value of e-commerce and adoption in SMEs.	Pre-implementation	Ghana	Owners, Managers	Interview, Survey questionnaire	Factors of Perceived Usefulness (PU), Ease of Use (EU), Compatibility (C), Organizational Readiness (OS) and External Pressure (EP) are important.
6.	[27]	Identify factors impacting e-commerce.	Post implementation	China	Customer, Employee,	Survey questionnaire	Customers, strategy, IT and comprehensive functions of website are identified as the critical factors impacting e-commerce success.
7.	[34]	Construct a model for factors that affect on-line consumer behavior intentions and post-purchasing behavior	Pre and Post Implementation	Taiwan	Tourist, Consumer	Survey questionnaire, Telephone call	There appear differences in the management of banking and tourism industries, regarding professional "brand image"; the affect of "subjective norm"; "perceived risk" and "gap of perceived service quality." "Product involvement" has no significant influence on "actual behavior". Intervening variables (e.g., product attribute) exist in the relationship of product involvement and actual behavior.
8.	[25]	To determine those factors perceived by users to influence the successful on-going use of B2B.	Post-implementation	UK	Manufacturer, Seller, NHS, Purchaser	Questionnaire, Focus Groups	Found five factors that are perceived by users to influence successful e-commerce use - "System quality," "information quality," "management and use," "world wide web – assurance and empathy," and "trust" are proposed as potential critical success factors.
9.	[14]	Investigate of supportive design features for users from different cultural origins	During Implementation	Australia, Korea	Customers	Questionnaire, Interview	The design of favorite sites for Australians look relatively simple compared to Koreans' favorite sites.
10.	[12]	Examine factors associate with the adoption of e-procurement.	Pre-implementation	Singapore	Chief Executive	Survey, Questionnaire	Firm size, top management support, perceived indirect benefits, and business partner factors are positively and significantly associated with the adoption of e-procurement.

11.	[41]	Explain how the tourism organizations can evolve their websites into marketing tools and how they can overcome the impediments to e-commerce adoption and usage.	Pre-implementation	Sub-Sahara countries (e.g., South Africa, Kenya)	Managers, IT experts, Government officers	Questionnaire	Organizations should convert their websites into a marketing tool by employing online and offline website promotional techniques to break into the highly competitive international tourism market.
12.	[22]	Propose a model that provides brief explanations of how to generate e-commerce value.	During-implementation	Malaysia	Managers	Online survey	Business resources (innovative capacity, market orientation, and strategic flexibility) impacted on e-commerce capability that contributes significantly to the organizational performance.
13.	[40]	Assess the prospects and challenges of Business-to-consumer (B2C) e-commerce implementation	Post-implementation	Nigeria	Customer	Survey questionnaire	There are significant relationships between the model variables. Task technology fit and perceived usefulness have significant relationships with intentions to use. Similarly, the interrelationship among trust, perceived risk, and behavioral intention are significant.
14.	[37]	Examines SMEs' investment in B2B web sites and the relationship between organizational drivers such as adoption readiness and constraints and evaluation of investments.	Pre-implementation	Australia	Owners, Directors, Senior Managers	Questionnaire	Reveal the mediating relationships between organizational drivers and their influence on SMEs' perceptions of benefits and stakeholder satisfaction and support the B2B web site evaluation effectiveness model. Further insights show that SMEs do not understand the complementary nature of the organizational drivers that support strategic alignment and therefore fail to realize benefits from their web sites.

15.	[29]	Find the barriers that small enterprises have faced in the implementation of the e-commerce during pre and post adoption phases	Post-implementation	Sweden	Owners	Case study, Interview	Security issues appeared as an obstacle in both pre and post adoption phase. Moreover lack of time to improve e-commerce activities, synchronization of demand and supply, price war among competitors, need for extensive marketing effort, payment related hazards are explored and identified as post-adoption barriers.
16.	[26]	Identify the problems in implementing e-commerce.	During and Post Implementation	Saudi Arabia	CIOs, CEOs, IS directors, IT managers	Survey questionnaire	Three main problems identified:1) Lack of supporting business law for e-Commerce; 2) Concern for cyber crime, data security & privacy; and 3) Difficulty in integrating e-commerce with existing system
17.	[42]	Identify the strategic directions of effective use and development of e-commerce on the activities of travel intermediaries.	Post-Implementation	Bulgaria	Manager	Observation, Survey questionnaire and In-depth interview	The development of travel intermediaries and use of the potential of e-commerce are being determined by *internal factors* (material and financial resources, marketing and management goals, staff, service technology, etc.) and *external factors* (legislative, economic, technological, and competitive). *Customers' behavior and inclination* to participate in online transactions are of decisive importance at the determining of the impact of e-commerce on travel intermediaries.
18.	[42]	Discuss the antecedents of the extent of e-Business use and the effect of this level on changing strategy, management and marketing.	Post-Implementations	Europe	IT manager, Senior Manager, Managing Director	Survey Questionnaire	Results suggest that the e-Business use implies changes in the firm's strategy, management and marketing in all the countries studied. The main factors that influence the level of e-business use are IT expertise and perceived benefits.

19.	[3]	Construct implementation performance measurement system in hotels travel e-commerce	Post-Implementation	China	Customers, Staffs	Questionnaire	According to the factor co-variance matrix, there is a strong correlation between e-commerce strategy elements and e-commerce implementation elements, which indicates that the scientific e-commerce strategy can promote e-commerce implementation efficiency.
20.	[5]	Examine e-commerce practices in "traditional" business culture as it compares to a "developed" business culture.	Post-Implementation	Iran	Executives	Interview	E-commerce practices and related technology present similar opportunities and challenges to organizations regardless of their business culture. Lack of appropriate technological hardware and software, is identified as a hindering factor preventing Iranian business organizations from reaching their e-commerce potentials.
21.	[4]	Aims to make a deep exploration into e-readiness from the viewpoints of technology, management, organization, and environment in order to understand how these dimensions affect the acceptance intention and degree of implementation of a corporate website.	Pre-Implementation	Taiwan	Senior executives	A mail survey	The variables that have a significant positive effect on the intention to accept a corporate website in SMEs are an awareness of corporate website, enterprise resources, technological resources, government e-readiness, market force e-readiness, and supporting industries e-readiness. The variables that have a significant effect on the degree of corporate website implementation in SMEs are an awareness of corporate website, senior executive commitment, corporate website governance, human resources, technological resources, government e-readiness, and market force e-readiness."