

Growth of Ecommerce and Sustainability: A Case Study in Dammam, Saudi Arabia

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Abstract:- Technology plays an important role in the economic development of a nation. At present, e-commerce plays a significant role in the economic development of a country. Nevertheless, the contribution of e-commerce revenue to the GDP of a country is a merge percent; studies highlight that in Europe, the growth of e-commerce differs strongly among countries since the success of e-commerce depends on innovation. The present study focuses on both primary and secondary data sources. Randomly selected students and public in malls were the target for primary method of data collection in order to analyse the sustainability of e-commerce. Samples for the study were collected after gaining students' permission regarding the sustainability of e-commerce. On the other hand, necessary data was collected during the weekends from public in malls after giving awareness and clarification about the scope of the study and its concept. Secondary data was collected from numerous sources such as international websites, news portals, business reports, online journals, working papers etc., and different reliable sources. The result of the study revealed that the young and educated individuals has made use of technology at ease in different platforms. Higher percentage of the sample exposed that the need and support from the government could be further enhanced.

Keywords:- E-Commerce, sustainability, reliability, efficiency, privacy.

I. INTRODUCTION

Nowadays the business environment is entirely different from was many years back. With the innovation and technological advancements, online platform in the form of e-commerce has given a rise to online businesses around the world. The buyers and consumers of the products and services are getting smarter and the emergence and growing rate of the need of e-commerce is due to its convenience to be used and to have access to any of the business facilities anywhere.

E-commerce has made the buying and selling process for consumers and buyers very convenient by using their phones and laptops. They are able to purchase and sell any products very quickly and without the stress of their location. The paper will examine not only the importance of e-commerce and its growth but it will also look into the present and future to analyse the sustainability of e-commerce in the business world. Although e-commerce has lots of benefits it does require many aspects to be reserved in mind to sustain its growth in the present and in the future.

II. RESEARCH MODEL

The present study has applied a mixed-mode survey for collecting primary survey. Respondents in the survey includes students and the public in malls during weekends. The public were contacted and interviewed by means of a questionnaire. In order to understand the efficiency of e-commerce and sustainability, the questionnaire was distributed to those individuals who have done recent online transaction. Previous studies reveal that e-commerce platform consists of different features in particular as a service provider; hence, this is estimated by means of service quality. Zeithaml and et al. (2002), in his article has pointed out, E-Quality measurement to study the service quality of the websites. The existing study focuses on E-S-QUAL that consists of four dimensions such as efficiency, system availability, fulfilment and privacy.

E-S-QUAL – Parameters to Assess the Quality of E-Commerce website	
Dimensions	Variables
Efficiency	Easy to understand Easy to access anywhere in the site Enables quick transaction Information in the site is well organized Website loads fast Website is simple to use Website enables to get in quickly Website is well organized
System Availability	The website is available anytime The website launches and moves on time Website does not crash Pages of the site do not freeze as order information is entered
Fulfillment	orders are delivered as promised Goods available on the site is available for delivery within the time Quick delivery of orders Only ordered items are delivered Website claims goods that are available on stock Offers given in the website is true Website makes exact promise on the delivery of goods
Privacy	Information about web shopping behavior is protected Personal Information is not shared to other sites Credit card information is protected

Table 1:- E-S-QUAL Website service adopted for the study

The questionnaire regarding sustainability was formulated based on secondary source, in particular the G4 Global Reporting Initiative (GRI) sustainability guidelines. From this report, the economic, environmental and social performance indicators were taken as an index in framing the questionnaire on the aspects of sustainability. The questions relevant to e-commerce and sustainability were drafted based on Likert’s five- point scale ranging from 1-strongly disagree to 5- strongly agree.

Economic, Environmental and Social Indicators	
Indicators	Variables
Economic	E-Commerce results in development of technology that improves energy efficiency E-Commerce results in costs efficiency E-Commerce results in improving financial competitiveness E-Commerce results in market development
Environmental	E-Commerce results in reducing Emissions, Wastage and Effluents E-Commerce results in improving Emissions, Wastage and Effluents E-Commerce results in efficient use of resources E-Commerce results in improving renewable resources E-Commerce results in reducing renewable energy E-Commerce results in improving energy consumption E-Commerce results in reducing energy consumption E-Commerce results in improving reverse logistics E-Commerce results in reducing reverse logistics
Social	E-Commerce results in job security of a company E-Commerce results in ethical behavior of a company E-Commerce results in improving the business standards E-Commerce affects the local suppliers E Commerce improves the capacity building of the local work force

Table 2:- Sustainability Parameters based on G4-Sustainability Report

Besides the demographic data, the behavioural traits of the individuals towards the online shopping, e-commerce and online stores were also involved. The aspects in these categories were frequency of visiting e-stores, their experience and return behaviour to that particular e-store were observed. In addition, the aspects that people attach with the online e-stores and e-shopping were also analysed e.g. access of the website, website layout and understanding . Furthermore, how interactive the website is, website launch, processing speed, errors of the website and lastly the information present on the website.

Another method used in analysing the data were the products management of e-stores and what consumers expect in that field. These aspects include the items categories, re-stocking the products, claims, payments methods, packaging, delivery process and reality vs. expectation aspect were included. It helped to learn how consumers are experiencing all this hype of e-commerce. Hence, to understand what they are being delivered, being promised by e-stores and in reality what they actually expect from these e-stores.

Lastly, the study discusses the connection between e-commerce and the efficient use of resources . Also, how e-commerce results in improving renewable resources, energy consumption, and renewable resources. These aspects helped in knowing the sustainable development of the eco-systems with reference to the e-commerce. Besides this, the link between e-commerce and the market development, job security and ethical behaviour of the company were also analysed in the research. In addition, as it will lead to social, economic and business sustainable development because of e-commerce. These methods and tools helped in getting maximum information related to the issue.

➤ *Growth of E-Commerce*

When it comes to e-commerce the first thought that comes to mind is online shopping. The inventor of e-commerce is Michael Aldrich (2011) who started this concept during 1979. The growth of e-commerce can be observed with the preference of almost every demographic area and age group to use different e-stores of their own choices. The growth of e-commerce was witnessed when the concept of “think globally” was emerged. It actually helped in bringing customers to one platform in the form of an e-store which can have any product of their choice in variety of e-stores. This is in reality hard to find in a physical store. Nowadays people who are actual consumers and buyers need everything on one space due to limited time. Furthermore, it helps businessmen to provide the users with the best to their customers on one platform but most importantly it has to be updated.

The growth of e-commerce also increased when people started using smart phones widely. The development of cheap smart phones gave everyone access to e-commerce. Secondly, the e-stores on e-commerce platforms are not always expensive rather consisting of every type of product within different price range and

categorizing the products for every age group and gender. The geographical boundaries are shrinking; thus every brand regardless of its origin is available to other customers in their area which is actually convenient shopping. This aspect of convenient shopping has made the e-commerce field in more demand. Governments also started to invest in such business scenarios as it helps to bring lots of investment in the country in the form of growth in e-commerce industry. (Sinha, 2016)

➤ *E-Commerce and Sustainability*

E-commerce is not just connecting with people through the internet or virtual environment. Just like traditional businesses it is associated with each other by having a business, its administration and the consumer along with the virtual environment. The major issue that e-commerce faces is sustainability. When it comes to e-commerce and sustainability in connection to economic growth, it is important for sellers and different businesses to be proactive in their approach in selling merchandise. While we look at sustainable development in the society with reference to e-commerce, it is important for e-businesses to be able to bring economic efficiency in the surrounding. That is by the approach of protecting and restoring the eco-systems around us. It will aid in bringing well-being for people. On one hand, e-commerce is aiding people with the best business services , but it is raising questions how it is moving towards a developed economy by protecting the eco-systems. (Chen & Zhang, 2015)

Sustainable development with the help of e-commerce can also be created by focusing on the goals of “business excellence and environmental excellence, by creating the bridge through which corporate behaviour can support sustainable development, the integration of economic growth and environmental development”. (Hossain, 2002) The major issue that hinders e-commerce from achieving sustainable development is of environmental factors that are ignored. By comparing e-commerce to traditional business, waste material, pollution and other ecological systems are slightly affected. However, high consumption of energy resources needs to be addressed when it comes to e-commerce. Besides this, e-commerce is also associated with typical procedures of packaging and transporting the products to the users and consumers. Thus, it is important to look into the environmental factors of e-commerce to bring long lasting sustainability in the economy.

➤ *Background of the Study*

Talking about e-commerce is obviously one of the most important and innovative aspect of businesses that help them to grow. “Enterprises should find a new business model for their development, so as to make better use of their own advantage” and e-commerce is one of those aspects. To have better sustainability of e-commerce in the future and in the present it is important to keep track of the performance of electronic e-commerce. Meanwhile, to analyse the factors that hinder between the rise of performance and growth. To give a competitive advantage for the sustainability of the businesses in e-commerce field it is important to bring innovative ideas and solutions to

influence the “sales growth in the short and long-term”. (Chen & Zhang, 2015)

One of the issues that hinders the sustainability of e-commerce is lack of trust. In e-shopping, the customers are often shown the items in high definition pictures, but in reality they do not get that item and this leads to lack of trust. (AdeptPackaging, 2017) Besides original brands e-stores, there are many low-quality e-stores with fake brands, which fools the customers and raises questions on the level of customer satisfaction in e-commerce deals. To sustain, it is important that e-commerce should develop e-trust with the customers to bring positive influence on customer loyalty, which is one of the main points of sustainability of e-commerce in the present and future. (Choi & Mai, 2018) The issue of sustainability also rises when quality of deliverable packages is poor and not done properly by the management of e-businesses, which bring more lack of trust. (AdeptPackaging, 2017)

Besides the aspect of sustainability in the e-commerce field with respect to consumers’ behaviour and consumers’ development process, it is also linked with environmental, social and economic sustainability. These aspects are from both sides that is the retailers and the consumers. With respect to environmental aspects e-commerce, just like traditional business, is involved in the same manufacturing, packaging and delivering of the products to the customers. However, there is one difference that is the medium of taking orders and selling products. Thus, e-businesses should make sure that they are effectively using the

resources especially energy resources to bring sustainability to improve, restore and save the eco-systems.

Beside this when it comes to economic sustainability then it refers to the increase in jobs and employment. When e-commerce businesses flourish , it gives rise to business transactions and thus brings lots of investment with respect to international brands and delivering of the products to the local market. Another important factor is of the rise in employment. Obviously, e-commerce gives rise to new job opportunities and is cheap to start an online business. Thus, many small and start-up businesses and entrepreneurs have emerged, which is also a positive aspect of e-commerce. The challenge is to bring positive aspects in this scenario and involve socialization so that not only the economy improves but it gives rise to social connections too. (JuditOláh and et al. 2018)

III. RESULTS ANALYSIS – DISCUSSIONS

The survey illustrates information regarding the demographic data of the participants also. The survey provides data like age, status, monthly salary, location, and knowledge of e-commerce and sustainability of the respondents. These aspects play a vital role in of the respondent’s knowledge on the present topic and how e-commerce is linked with sustainability. The factors of age, education, status and monthly income also affects the buying, purchasing and selling behaviour of the individuals and that is why these aspects were included in the survey.

Measures	N	Classification	Frequency	Percentage
Gender	66	Male	29	43.9
		Female	37	56.1
Age of the respondents	66	less than 20	16	24.2
		21-30	34	51.5
		31-40	15	22.7
		41 and Above	1	1.5
Monthly Salary of the respondents	66	Below 5000	4	6.1
		5001-10000	9	13.6
		10001-15000	23	34.8
		Above 15000	30	45.5
Level of Education	66	High School	2	3.0
		Graduate School	12	18.2
		Under Graduate	48	72.7

Table 3:- Profile of the Respondents

The results in table 3, clearly depicts that in e-commerce sustainability the location does not play a vital role, but the demographic data like age, gender, education and salary of the individual on monthly basis plays a vital role. The data clearly depicts that young people and often women are the strong users of the ecommerce stores and e-businesses. At adult age, people do prefer e-commerce due, to shortage of time to go to physical shops. In contrast,

young people like teenagers and women prefer e-shopping because it gives them convenience to have the product at their doorstep.

With respect to monthly salary, virtual stores have variety of products with every price range and offers discounts and sales offers thus bringing a new increase in trend by increasing the customers. Based on the knowledge

of the customers, the majority are aware of e-commerce and about sustainability. There is still a need of bringing awareness amongst the customers and consumers regarding sustainability issue. With reference to the environmental aspects, people need awareness regarding the link of e-commerce with the environment. Results depict that they disagree with the link of e-commerce with the environment. Overall, the results depict a positive impact on the economic, employment and social sectors of e-commerce which shows the positive changes of sustainability in the future. In relation to customers trust in e-commerce, businesses have to bring innovation, high quality products and consider the needs and demands of the customers to gain their e-trusts.

The underlying principles behind the opinion survey is to discover the effect of e-commerce on different sustainability factors. The results in table 4 is based on the valid response of 66 samples, the data infers that the overall mean score is 3.3 out of 5, hence we can conclude from the sample that e-commerce has a positive effect on sustainability of an organization. Regarding the data, it shows that the numbers are slightly negatively skewed, since most of the responses have large values and are similar to the results of the kurtosis that show slightly leptokurtic that is more peaked. Analysing all these effects it was found that E-Commerce results in market development. It has the high score of 4.06 out of 5 followed by E-Commerce results in development of technology that improves energy efficiency with a mean score of 4 out of 5.

Results on sustainability Factors	N	Mean	Std. Deviation	Skewness	Kurtosis
E-Commerce results in development of technology that improves energy efficiency	66	4.0000	.99228	-.487	-.985
E-Commerce results in costs efficiency	66	3.4394	.99427	-.312	-.277
E-Commerce results in improving financial competitiveness	66	3.7424	.79053	.306	-.969
E-Commerce results in market development	66	4.0606	.67662	-.073	-.754
E-Commerce results in reducing Emissions, Wastage and Effluents	66	2.5909	1.14995	.303	-.632
E-Commerce results in improving Emissions, Wastage and Effluents	66	3.3333	.81019	-.331	.128
E-Commerce results in efficient use of resources	66	3.0758	1.31630	-.018	-1.109
E-Commerce results in improving renewable resources	66	3.4091	1.24007	-.434	-.759
E-Commerce results in reducing renewable energy	66	2.6061	1.20101	.209	-.880
E-Commerce results in improving energy consumption	66	3.2121	.93669	.368	-.683
E-Commerce results in reducing energy consumption	66	2.9394	1.03595	-.047	-.746
E-Commerce results in improving reverse logistics	66	2.8030	1.02612	.410	-.146
E-Commerce results in reducing reverse logistics	66	3.3182	.66005	-.119	-.311
E-Commerce results in job security of a company	66	3.1667	.77625	-.505	-.525
E-Commerce results in ethical behavior of a company	66	3.5455	.53152	-.503	-1.080
E-Commerce results in improving the business standards	66	3.5909	.49543	-.378	-1.916
E-Commerce affects the local suppliers	66	3.4242	.70297	-.818	-.547
E-Commerce improves the capacity building of the local work force	66	3.3182	.63631	-.385	-.644
E-Commerce results in development of technology that improves energy efficiency	66	4.0000	.99228	-.487	-.985

Table 4:- Mean Scores of the Samples

The study has applied Principal Component Analysis (PCA) in order to identify the hidden factors within E-S-QUAL dimensions. As discussed by (Parasuraman, 1985; 1988; 2002; 2005) E-S-QUAL dimension as the quality of service that constitutes four factors such as Efficiency, System availability, Fulfilment and Privacy is further categorised into twenty two values greater than one according to (Kaizer, 1960;19740) is extracted from these twenty two values is depicted in table 5. All these principles components accounted to about 79.82 percent from the total variance. Since the study aims at bringing out a simple structure, a cut-off of 0.50 was used for item selection and a normalised varimax rotation. To find out if there is a correlation matrix between the variables is an identity matrix the Bartlett's test of Sphericity was applied. The results confirmed that the calculated vale is 0.003, which is lesser than the P value 0.05. Hence, the study concludes that the relation between the variables is an identity matrix.

Category/Dimensions	Efficiency	System Availability	Fulfilment	Privacy
Easy to understand	.733			
Easy to access anywhere in the site	.732			
Enables quick transaction	.731			
Information in the site is well organized	.644			
Website loads fast	.821			
Website is simple to use	.775			
Website enables to get in quickly	.821			
Website is well organised	.661			
The website is available anytime		.687		
The website launches and moves on time		.718		
Website does not crash		.758		
Pages of the site do not freeze as order infomation is entered		.724		
orders are delivered as promised			.721	
Goods available on the site is available for delivery within the time			.826	
Quick delivery of orders			.732	
Only ordered items are delivered			.712	
Website claims goods that are available on stock			.661	
Offere given in the website is true			.763	
Website makes exact promise on the delivery of goods			.799	
Information about web shopping behavior is protected				.729
Personal Information is not shared to other sites				.598
Credit card information is protected				.692
Eigenvalues	13.867	3.753	3.672	0.708
% of Variance	47.13	14.76	14.72	3.21

Table 5:- Summary of Principal Component Analysis for E-S-QUAL

In order to analyze the internal reliability of the E-S-QUAL factors according to Flynn et al. 1990, Cronbach's coefficient Alpha (Cronbach, 1960) was calculated for each dimension. Table 6, points out the values of the Cronbach alpha ranges between 0.006 and 0.249. Hence, the study points out that the values are below the minimum acceptance reliability level of 0.7

E-S-QUAL Dimensions	Mean	SD	Items	Cronbach alpha	Kaiser-Meyer-Olkin
Efficiency	3.44	0.98	8	0.073	.439
System availability	3.03	1.06	4	0.006	
Fulfilment	2.92	1.30	7	0.129	
Privacy	2.58	1.41	3	0.249	

Table 6:- Descriptive statistics and internal Reliability

IV. CONCLUSION

In the economy, people are aware of the importance of e-commerce, but they need lots of awareness with respect to the sustainability issue regarding e-commerce. Businesses are also oriented towards their needs and demands to be fulfilled and rarely pay attention to the environmental sustainability issue of the e-commerce. Over all, there are more chances of increase in e-commerce demand because of the added advantages connected to the customers convenience and digital play of shopping. However, with reference to environmental sustainability businesses using e-commerce have to work hard to ensure saving, restoring and reserving the eco-systems.

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