

An Analysis of Consumers' Trust, Logistic Infrastructure and Brand Awareness towards E-Commerce Implementation in Kazakhstan

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Abstract

The current work is done to find the determinants of the e-commerce implementation from customers' trust, logistic infrastructure and brand awareness. Data are collected through quantitative method, which involved a questionnaire. A questionnaire was obtained gathering data from 143 respondents in the three universities in Kazakhstan. The questionnaires are based on the customers' trust, logistic infrastructure, and brand awareness with the e-commerce relationship. Theory of Planned Behavior is used for a research study to explain the influence of e-commerce implementation on consumer's purchasing behavioral intention. The empirical results revealed that logistic infrastructure and brand awareness are the major determinants.

Keywords: brand awareness, consumer trust, logistic infrastructure, E-Commerce

1. Introduction

There are a great number of resources about e-commerce. According to Turban (2000) E-commerce is a commercial activity in the field of advertising and distribution of goods and services through the use of the Internet. This area of the economy that involves all business and financial operations carried out via the Internet, and different activities related to such transactions. The most popular trend in e-commerce is electronic business -realization of trading-purchasing activity via the Internet. Therefore, there are many reasons for shopping online, easier access to information, availability and simplicity of purchase, wide range of items, organization and economy of time, attractive prices, convenient delivery and availability of comparative advantages and disadvantages among the offers (Kara et al., 2011; Jamali et al., 2014).

With the use of the Internet, even the growing interiors of country e-commerce play a vital role in Kazakhstan's economic growth. Naturally, when more and more people are beginning to use e-commerce, it has a direct and obvious benefit to the Kazakhstan economy. Sales of goods and services over the Internet are not just about convenience, but also about the various options that open for remote cities and villages. Therefore, e-commerce opens up vast opportunities for consumers, because they can go shopping independently of time and place. Thus, online shopping has the potential to fulfil both the needs of consumers as well as buyers.

Today the Kazakhstan market of e-commerce is concentrated in large cities, especially in Almaty and Astana. Local inhabitants, including remote areas, this line of e-commerce is not available too, nevertheless they represent the most attractive audience. However, firstly Kazakhstani regions significantly lags behind the capitals in terms of Internet penetration, and, secondly, the geographical conditions of Kazakhstan issue delivery become one of the most pressing. The need to deliver goods for long distances, in remote settlements, a large part of the year-in inclement weather and road conditions require a modern, well-functioning, logistical structure, and in this regard, there is a shortage of supply. Of course, there are the major international players, such as DHL and the Pony Express, but send the goods according to the channels too costly. That is why the main problem is the problem of logistics. The reason for the ineffectiveness of e-commerce lies in the fact that Kazakhstan has not developed transportation and logistics infrastructure. Today we have no logistical transport infrastructure. To order conditionally book from Astana or Almaty, to Uralsk get several times more expensive than buying the same edition through online stores in London, New York and so on, "The main obstacle right now is the lack of infrastructure; it is good automobile roads, railways, in order to get from point A to point B with minimum cost and maximum speed (Veselova, 2013). Therefore, this study is going to open up new opportunities for new

operators that can make delivery within the locality, to create the logistics structure that will ensure not only delivery, but also storage, packaging.

Another problem of e-commerce is the lack of trust on the part of customers to online shopping and online services. Distrust can be explained by several factors: the lack of recognized and trusted brands, the low level of awareness among the population about the basic rules of payment through the Internet, inability to see and try the product "live" and not sufficiently complete information about it. Due to lack of physical shopping experience in e-commerce, consumer trust is becoming a serious problem and the reason for their distrust of the online shopping. This means that some products do not contribute to Internet purchases, this is explained by the fact that many consumers prefer to see and touch things, thus by feeling real shopping experience.

Weak demand for the purchase of goods on the domestic market through the Internet led to the fact that in 2012, Kazakhs made purchases through the Internet for \$ 1.5 billion and only \$ 60 million have had on the domestic market (Gaifutdinova, 2013) most online stores doesn't meet the needs of customers. An inconvenient navigation, information overload, inelegant design-all of this has a negative impact on attracting potential customers (Kasenova, 2013; Khoje et al., 2013). According to studies, if a user in the first eight seconds did not find useful information, he leaves the resource. Thus, internet-shops should be focused on the design of their websites, in order to reduce the distrust of online-consumers. For this purpose, the potential buyers should be provided full information about websites at the moment of purchase. This means that return policy, terms of delivery of the purchased goods and possible related problems-should be set extremely clearly and in simple language (Javadi, 2012).

According to Kwok Tam (2007) emotions are one of the important factors which effect on behavior of purchase. If customers do not know the brand name or do not trust the brand, they are hesitant to shop online. Tasnuba (2010) claimed that brand loyalty has an influence on consumer behavior and consumers prefer to purchase among few options proposed by the famous brand, rather than from a large list of unfamiliar brand. Unfamiliar brands complicate the process of online shopping. Thus, the brand name has a great impact on the perception of Kazakh consumers and motivates them to shop online. (Kharim, 2011) Hence, such important indicator, as the brand awareness directly affects consumer confidence. It is the main component during making online purchases. That is why; most online consumers acquire goods or services of the international brand recognition than from unfamiliar brands. Therefore the main objective of this paper is to identify whether there is any relationship between logistic infrastructure, consumer's trust, and brand awareness with e-commerce implementation.

2. Literature Review

2.1 E-Commerce in Kazakhstan

Nowadays e-commerce is one of the developing formats of trade, and this tendency is evident even in the areas where it has a successful and long history. Some progress with respect to the revitalization of such kind of Internet operations showed Kazakhstan compared with developed countries, like the USA and China, and even in Russia may seem modest. However, three-four years ago, the capability to purchase items by online was considered by the majority of Kazakhstan citizens as risky and exotic (Mertai et al., 2013; Jamali, Samadi, & Gharleghi, 2015).

Despite this, bright economic growth of Kazakhstan continues to outperform most other countries. After all, Central Asian leader took a place among the best 10 fast developing countries in the world economies. While a significant part of this growth is fuelled by huge reserves of oil and gas resources in Kazakhstan, smaller, less traditional e-commerce sector shows great economic potential as well. Internet usage has been steadily increasing in the rapidly-modernizing nation, and great numbers of Kazakhstan citizens are jumping in an exciting new field of online commerce. In 2000, less than one half of one percent of all Kazakhs had easy access to the Internet. Nowadays, more than 50 per cent of people is sitting in the Web and log in with increasing frequency for business sites, offering a wide assortment of products, services and entertainment (Dossybayev, 2008).

The development of e-commerce in Kazakhstan, while not explosive, was steady-and for good reason. The rising incomes of Kazakhstan, low population density and extensive grounds, making it an ideal candidate for a reliable Internet-generated, a mail-order business. Foreign companies are taking notice. Lamoda, Russia Company, which sells trendy, high-end clothing line, opened for online business in Kazakhstan one year ago, in March 2012, American investment giant JP Morgan is reported to have pumped at least \$500 million in Lamoda to help develop its online business in Kazakhstan and other Commonwealth countries of independent States countries (Bisenov, 2014).

2.2 Consumer Trust and E-Commerce

The role of customer relationship building is an essential component in e-commerce, which is marked with building trust between the parties being required. Papadopoulou et al. (2001) suggest that building relationships with clients in e-commerce provides matching the expectations and needs of clients (Papadopoulou, Kanellis, & Martakos, 2001).

Online-shopping needs more confidence, because it is more complicated than traditional shopping. On the Internet, it is not easy to have a good relationship of trust between consumer and buyer. Typically, in social environment related to uncertainty and dependence, trust is usually a significant factor. Some researchers believe that: "Online operations and exchange relations are characterized by not only indeterminacy, but also, lack of control, anonymity and the potential opportunism that makes risk and trust the most essential components of e-commerce". According to Petrovic et al. (2003) Trust is a mental shortcut that buyers can use when attempting to decrease the indeterminacy and complicity of the operations and relations in electronic markets. Among different reasons-lack of trust is the main reason for consumers do not purchase from Internet providers (Johansson, 2006; Zahir & Gharleghi, 2015).

Trust in online transactions is considered as an important factor in defining the success or failure in e-commerce. The purchasing and selling processes of goods individually, include many phases, such as information, agreement and settlement phase. Figure 1 on the following page, shows the level of trust in different stages of the transaction. The first information phase, indicates that the activities is viewing via the online store. In the next agreement phase, customers give their consent on the choice of product and the price. In the last settlement phase of the operation, the order is placed and payment is produced. We consider that the same phase can be used in getting and purchasing of services online. The transaction phases can be associated with various levels of trust. At various phases trust can be achieved by using stamps and insurance solutions, for example, "seals of approval", guarantees returning money and dispute resolution system (Petrovic et al., 2003; Meftah & Gharleghi, 2015; Tee et al., 2014).

2.3 Logistic Infrastructure and E-Commerce

Cho et.al (2008) noted that relations between logistics and e-commerce are very close. Logistics plays a crucial part in the development of e-commerce; the influence of e-commerce on the logistics must be huge. Logistics are inseparably linked in the future development of e-commerce. They believe that relationships are the contradictions of the logistics for the development of e-commerce, and e-commerce is the means to resolve this contradiction (Li, 2014).

According to Cho, Ozment, and Sink (2005), e-commerce has a very essential influence on the development of logistics business. Using the Internet, logistics companies can find a wider range of consumers and can expand their business in the country and even in the whole world volume. The great amount of companies can quickly find the best price for logistics companies. Online logistics worldwide can catch the large amount of business logistics. At present, many buyers via online logistics market found a partner, found customers, found foreign agent.

According to Wu (2005), the growth of e-commerce is imminent, but if a client wants to buy real products online, the logistic system is required. And the growth of e-commerce had significantly expedite the development of logistic industry. E-commerce has caused trade, innovation, namely the circulation has changed. In the developing process of E-Commerce logistics have a significant role. Without an effective and proper logistic system, will be difficult to obtain the effective development of e-commerce. Also, e-commerce in developing Kazakhstan's logistics infrastructure from the traditional form in modern regime, as well as play a crucial role. As technology systems and the development of e-commerce applications and logistics becomes more close relations. On the one side, the improvement of logistic system gives a very wide privileges and technical help, we can say that there is no way for modern logistics, however, the modern logistics system can give a new direction and new consumer demand, modern logistics has become an important part of the system and support modern system of business activities (Cho et al., 2008)

2.4 Brand Awareness and E-Commerce

Online branding is explained in almost every book about e-commerce or e-business. Some note that in a world where much information, brands are becoming increasingly significant, as they save customers' time, by decreasing the cost of their searching. This position can be developed further, discussing that the creation of the brand will become more significant in ensuring continuity and commitment to the clients in a fast-moving market. In an e-commerce environment, where physical contact is decreased and the quality of the product and

the benefits must be distilled and captured in a way that can be transmitted by can be more significant (Rowley, 2004).

According to Jevons and Gabbott (2000) Brand names help the buyer to get the right picture of the products by passing the package attributes of a product or service. This improves the confidence of the buyer that they make successful purchases, and develop the effectiveness of the search. From a manufacturing perspective, branding allows the provider to catch the attention of loyal customers, this often leads that the manufacturer may impose with a high branded products, and this helps the provider for the market segmentation. The unknown brand has high value brand, high loyalty brand, good quality, well-known name, strong associations with the brand and other assets, such as patents, trademarks and relationships channel. (Ibeh, Luo, & Dinnie, 2005; Noguev et al., 2011).

Purchase intention refers to the willingness of consumers to participate in online exchanges with web-providers. (Pavlou & Gefen, 2004) When consumers trust online brand, they believe that it can protect its privacy by selling products of high quality, and safe filling in online transactions. In this way, the consumers' intention to buy is formed by evaluation of products or relationship to the brand in combination with external factors stimulating. Repurchasing of online-brand products will create customer loyalty, which has been determined as a positive attitude towards the brand, by consistent buying this brand for a long time. Good relations with clients by providing them satisfactory result of online buying activity will create customer loyalty to the brand (Gefen & Straub, 2004; Samadi et al., 2015).

3. Research Methodology

3.1 Research Framework

The research has identified three variables that influence on e-commerce implementation of the previous research and updated literatures. The three variables are consumers' trust, brand awareness and logistic infrastructure. Here is theoretical framework as below:

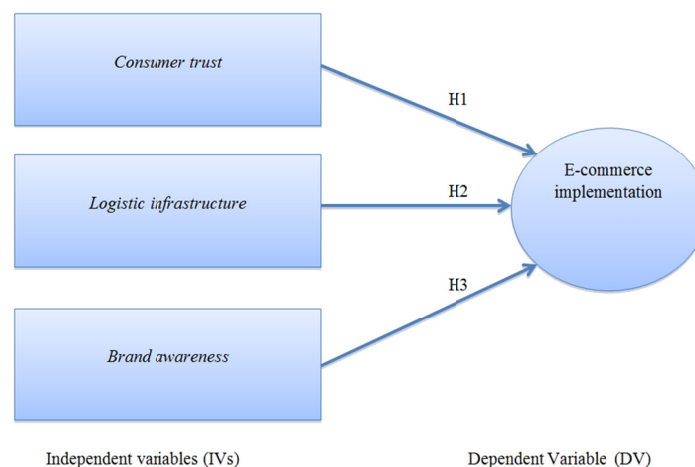


Figure 1. Research framework

3.2 Research Hypothesis

Hypotheses will be figured out according to the theoretical framework. The Hypotheses will be according to the research objective to determine the efficiency of each variable; it will help to provide the relation between the independent variables and the dependent variable. The following are the detail of research hypotheses:

The trust has been considered as a crucial component of e-commerce because of its propensity for lack of information in the online shopping (Ba & Pavlou, 2002). A lot of researchers showed that trust must be provided before people involved in the transaction. Currently, the e-commerce market is a popular shopping. Nevertheless, it is risky. Operations can be performed only on the basis of a certain level of trust from the buyers (Tan & Thoen, 2000; Corbitt, et al., 2003; Chong et al., 2003; Khesal et al., 2013). The impact of consumer trust with e-commerce implementation will be described in this hypothesis.

H1. There is a relationship between consumer trust and e-commerce implementation.

Logistic infrastructure plays a very important role in the implementation of e-commerce. Due to the fact, that for consumers physical delivery is a significant factor (Esper et al., 2003; Agatz et al., 2008). Therefore, logistics capabilities positively influence the company's activities. The impact of logistic infrastructure with e-commerce implementation will be identified in this hypothesis.

H2. There is a relationship between logistic infrastructure and e-commerce implementation.

Brand awareness greatly affects the consumer decision-making process; consumers typically use brand recognition as a decision heuristic technology. Famous brand is much more likely to be selected by users for an unknown brand (Hoyer and Brown, 1990). According to Teo and Liu (2007) brand awareness and brand image can influence on e-commerce implementation. All these hypotheses are applied through quantitative data analysis methods. Questionnaires were done to gather information to reach the work's aims and objectives.

H3. There is a relationship between brand awareness and e-commerce implementation.

3.3 Sampling Techniques

Quantitative methods were used to gather primary data by surveying undergraduate, graduate and postgraduate students of Kazakhstan. The questionnaire research will be conducted by online in three universities: Eurasian National University (ENU) named by L. N. Gumilyov, Aktobe Regional State University (ARSU) named after K. Zhubanov, and Al-Farabi Kazakh National University (KazNU). The total sample population was 143 students. The questionnaire was sent among females and males. All participants in the following survey have come of age. Also, they were not selected for this survey, the answers of each student is voluntary. So, the findings can be considered as random.

In order to identify the sample size of this study, the stratified random sampling method will be implemented. The target group are students from different universities in Kazakhstan. The students can be stratified on the basis of the demographic characteristics, such as age, gender, and education level. Due to the different kinds of universities, students are coming from various cities. The target students can be from different fields, such as IT Management, MBA, Engineering software, Economics, Computer networking, Technology Management, Natural Sciences, and Physical Sciences.

For quantitative data, statistical calculations should be used to determine how large the sample size should be. One suggested calculator is Raosoft, which includes a margin of error, confidence level and population size. (Hamburg, 1985) In this project the "Raosoft" was used in order to find the sample size of students. Therefore, the margin of error was identified as 7%, which means the amount of error, which can be tolerated. The confidence level is the amount of uncertainty, and for this project, it was determined as 90%. The population size was chosen approximately 1000000 people. Thus, the recommended sample size was identified as 139 students.

3.4 Data Analysis

To analyses the data, SPSS were implemented to apply the reliability, validity, and correlation as well as regression analysis.

4. Empirical Findings

4.1 Reliability and Validity of Data

Before proceeding to the data analysis, it is significant to check out the reliability and validity of data in the questionnaire. These actions are carried out by SPSS 22. And the results are shown in below.

Table 1. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.649
Bartlett's Test of Sphericity	Approx. Chi-Square	590.053
	df	136
	Sig.	.000

The Validity analysis was constructed first in data. To check the validity of the data the KMO and Bartlett's test were used. The validity analysis is used in many researchers to verify whether questions are valid or not. Thus, it checks the adequacy of questions by determining partial correlation among data. Table 1 shows, that the KMO test meaning is greater than 0.6 and it is near to 1. That indicates the meaning of validity is correct to test because it is greater than 0.5 and it is giving successful factor analysis. Moreover, p-value of Barlett's test must be significant and it must be below than 0.05. Since this is below than 0.05 hence, it is significant.

Therefore, all data are accepted and valued which was given by questionnaire. All the questions which represent the four factors (Customers' trust, Logistic infrastructure, Brand awareness, and E-commerce implementation) are significant and valid for analysis.

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Figure 1. Performance for Cronbach's Alpha coefficient

Source: Cronbach, 2004.

Table 2. The reliability analysis of customers' trust

Cronbach's Alpha	Cronbach's Alpha Based on Standardized	
	Items	No of Items
.713	.749	5

Next, the Table 3 represents the result of reliability test of another variable (Logistic infrastructure). The value of Cronbach's Alpha is greater than 0.7 and it is 0.706. Thus, the questions are reliable and acceptable for further survey.

Table 3. The reliability analysis on logistic infrastructure

Cronbach's Alpha	Cronbach's Alpha Based on	
	Standardized Items	N of Items
.706	.720	4

Next the reliability test is realized in Brand Awareness variable to find the reliable factor between its questions. According to the table 12, the value of Cronbach's Alpha is 0.726, which is greater than the standard value of Cronbach's Alpha. Hence, the questions in this section are reliable and the answers of participants can indicate the result of the study.

Table 4. The Reliability analysis on Brand Awareness

Cronbach's Alpha	Cronbach's Alpha Based on	
	Standardized Items	N of Items
.709	.708	4

Finally, the last variable (E-commerce implementation) is studied below. According to the Table 4, the Cronbach's Alpha value is 0.845 and it is greater than 0.7. The value of Cronbach's Alpha of E-commerce implementation represents the high reliability among the questions in the section.

Table 5. The reliability analysis on E-commerce implementation

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Based on N of Items
.845	.849	4

The reliability test was carried out on all variables. All the results of Cronbach's Alpha illustrates that the questions are reliable because all of them are greater than 0.7. Therefore, the usage of data for the interpretation and analysis is good and significant.

4.2 Normality of Data

Table 6. Normality analysis

	N	Minimum	Maximum	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CT_Q1	143	1.0	5.0	.058	.203	-.928	.403
CT_Q2	143	1.0	5.0	.035	.203	-1.056	.403
CT_Q3	143	1.0	5.0	-.085	.203	-1.065	.403
CT_Q4	143	1.0	5.0	-1.009	.203	.470	.403
CT_Q5	143	1.0	5.0	-.419	.203	-.880	.403
LI_Q6	143	1.0	5.0	-.304	.203	-.903	.403
LI_Q7	143	1.0	5.0	-.219	.203	-.561	.403
LI_Q8	143	1.0	5.0	-.582	.203	.397	.403
LI_Q9	143	1.0	5.0	-.420	.203	-.526	.403
BA_Q10	143	1.0	5.0	-.623	.203	-.436	.403
BA_Q11	143	1.0	5.0	-.837	.203	.259	.403
BA_Q12	143	1.0	5.0	-.846	.203	.513	.403
BA_Q13	143	2.0	5.0	-.190	.203	-.596	.403
ECL_Q14	143	1.0	5.0	-.661	.203	.137	.403
ECL_Q15	143	1.0	5.0	-.791	.203	.740	.403
ECL_Q16	143	1.0	5.0	-.658	.203	.427	.403
ECL_Q17	143	1.0	5.0	-.783	.203	.312	.403
Valid N (listwise)	143						

The decision rule of Skewness-Kurtosis should be less than -2 or greater than 2. If Skewness-Kurtosis is 0, the data are perfectly symmetrical.

Based on Table 6, the Skewness results illustrate that Q1, Q2, Q3, Q5, Q6, Q7, Q9 and Q13 are approximately symmetric. Next, Q8, Q10, Q11, Q12, Q14, Q15, Q16, and Q17 indicate that distribution is moderately skewed. Lastly, Q4 shows that the distribution is highly skewed. Thus, all questions are within the +2 to -2 range, which means that the data are normally distributed. From the table above, all questions (Q1-Q17) are less than +2, and distribution has the form as platykurtic which means that the data is normally distributed.

4.3 Chi-Square Analysis

Chi-square test has an extremely wide application in the statistics. In general terms, we can say that it is used to test the null hypothesis of the subordination of the observed random variable predicted by the theoretical distribution law. In other words, it is a statistical test to find the relationship between independent variables and dependent variable (Joyce, 2002). In order to find the relationship between two variables, will be used the 95% level of confidence. Hence, it means that 5% ($\alpha = 0.05$) is for the rejection and risk.

On the basis of purpose of the study, chi-square analysis test determines whether there is statistically significant relationship between the three variables (customers' trust, logistic infrastructure, brand awareness) and e-commerce implementation, and to identify the influence and effectiveness of each factor.

Table 7. Summary description of Chi-Square test

	Cases		N	Total		
	Valid N	Missing Percent		N	Percent	
Do you think the customers' trust will influence on e-commerce implementation?	143	100.0%	0	0.0%	143	100.0%
Do you think the logistic infrastructure will influence on e-commerce implementation?	143	100.0%	0	0.0%	143	100.0%
Do you think the brand awareness will influence on e-commerce implementation?	143	100.0%	0	0.0%	143	100.0%

The above table indicates that the valid data are 100%, and missing data is 0; it means there is no any missing value for each variable and all results are Validity.

On the basis of the table below, the significance value is 0.113, therefore, the p-value is higher than 0.05 ($0.113 > 0.05$), therefore, the value is not significant. It can be concluded that consumers' trust and e-commerce implementation are independent at 0.05 of confidence level and there is no relationship between them.

Table 8. Chi-Square Test of customers' trust and e-commerce implementation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	232.938 ^a	208	.113
Likelihood Ratio	197.520	208	.688
Linear-by-Linear Association	.673	1	.412
N of Valid Cases	143		

a. 238 cells (100.0%) have expected count less than 5. The minimum expected count is .01.

Table 9. Chi-Square Test of logistic infrastructure and e-commerce implementation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	201.802 ^a	156	.004
Likelihood Ratio	163.834	156	.318
Linear-by-Linear Association	12.328	1	.000
N of Valid Cases	143		

a. 181 cells (99.5%) have expected count less than 5. The minimum expected count is .01.

The meaning of Alpha for the chi - square test is 0.05. The table above shows that the chi-square test is 0.004 ($p\text{-value} = 0.004$). According to the results, p-value is greater than 0.05 ($p\text{-value} = 0.004 < 0.05$), the value is defined as significant, which means researcher can be 95% confident of the relationship between two variables not accidental. Therefore, at the alpha level of 0.05, the result can be represented that logistic infrastructure and e-commerce implementation are dependent or existing strong relationship.

Table 10. Chi-Square Test of brand awareness and e-commerce implementation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	245.841 ^a	182	.001
Likelihood Ratio	209.558	182	.079
Linear-by-Linear Association	41.861	1	.000
N of Valid Cases	143		

a. 209 cells (99.5%) have expected count less than 5. The minimum expected count is .01.

Table above illustrates that the significance of the chi-square test is 0.001 ($p\text{-value}=0.001$) at 0.05 of confidence level. Because the p-value is less than 0.05 ($p\text{-value}=0.001 < 0.05$), at 0.05 of confidence level, the result shows that there is a significant relationship between brand awareness and e-commerce implementation.

4.4 Multiple Linear Regressions

Multiple Linear Regression is statistical method which makes use of variables to predict the result of the response values. (Bulman, J., 2002) It is the presentation of relationship among several variables, in this relationship, y is dependent on x , so the regression can be performed to present the behavior of y given x out of the range of the known data set such as customers' trust, logistic infrastructure, and brand awareness; e-commerce implementation which is the dependent variable. The multiple linear regression equation is described by the model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

While the independent variables are: x_1 - customers trust, x_2 - logistic infrastructure, x_3 - brand awareness.

The research question asked whether the customers' trust, brand awareness and logistic infrastructure have any influence on e-commerce implementation. The multiple correlation coefficient (R) is equal to 566, which indicates moderately positive correlation between customers' trust, logistic infrastructure, brand awareness and e-commerce implementation. R square is 0.320, which means that 32% of variation in e-commerce implementation can explain by consumers' trust, brand awareness and logistic infrastructure. And other 68% of variation of e-commerce implementation can be explained by other factors.

Table 11. Coefficients of multiple regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,566 ^a	,320	,305	2,32467

a. Predictors: (Constant), BA, CT, LI

The ANOVA table shows the possibility of predicting e-commerce implementation with Customers' trust, Logistic infrastructure, and Brand awareness. So, we can write the following formula:

$$\hat{Y} = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5$$

E-commerce implementation = 6227+ Consumers' trust \times (-0.062)+logistic infrastructure \times 0.170 + brand awareness \times 0.481

Table 12. ANOVA table of significant value

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	353,487	3	117,829	21,804	,000 ^b
	Residual	751,171	139	5,404		
	Total	1104,657	142			

a. Dependent Variable: ECI

b. Predictors: (Constant), BA, CT, LI.

The ANOVA table shows that $F = 21\ 804$ and is significant. This indicates that the combination of the predictors significantly predicts e-commerce implementation. Furthermore, P value (see Table 12) was lower than 0.05; this study could conclude that the model was significantly good at building the outcome of e-commerce implementation in online shopping.

Table 13. Regression coefficients for regression model

Variables	Unstandardized Coefficients		Standardized Coefficients	t-stat	Sig.
	B	Std. Error	Beta		
(Constant)	6,227	1,409		4,421	,000
CT	-,062	,062	-,072	-,999	,319
LI	,170	,079	,159	2,151	,033
BA	,481	,070	,512	6,901	,000

Based on table above, the hypotheses testing can be concluded as below:

H1. There is a significant relationship between customers' trust and e-commerce implementation

Looking at Table 13, the p-value on the customers' trust is 0.319, which means the p-value is greater than 0.05. ($0.319 > 0.05$) Therefore, the consumers' trust cannot be used as a predictor for e-commerce implementation. So we reject H1, which means there is no significant and positive relationship between customers' trust and e-commerce implementation.

H2. There is a significant relationship between logistic infrastructure and e-commerce implementation

Table 13 shows the logistic infrastructure value can predict the e-commerce implementation. According to outputs, p-value of logistic infrastructure is 0.033, which is less than $\alpha = 0.05$ ($p\text{-value} = 0.000 < 0.05$). Thus, the alternative hypothesis (H1) is accepted, which means there is a significant and positive relationship between logistic infrastructure and e-commerce implementation.

H3. There is a significant between brand awareness and e-commerce implementation.

The level of significance in Table 13 shows the possibility of predicting e-commerce implementation with brand awareness. Based on the test, the p-value of brand awareness is 0.000, which is less than $\alpha = 0.05$ ($p\text{-value} = 0.000 < 0.05$). Thus, the alternative hypothesis (H1) is accepted, which means there is a significant and positive relationship between brand awareness and e-commerce implementation.

5. Conclusion

Based on the overall evaluation of the e-commerce implementation, we have been able to identify and explain the factors that can affect the results of the implementation of e-commerce. These factors have been associated with the results of the questionnaire, complete solutions for e-commerce. Hence, we have introduced three research hypotheses that have been tested using multiple regression. According to the results, two hypotheses have been supported; they are H2 and H3. However, H1 was rejected. Therefore, the results showed that the e-commerce implementation is affected by two factors: logistic infrastructure and brand awareness. In general, determining the results of factors that affect e-commerce implementation is important not only for consumers, but also has the meaning for companies to implement e-commerce. The received results during this study have benefits for companies considering e-commerce implementation. Also, they are useful for such companies that have already involved in e-commerce implementation, because it can give them information how to improve and facilitate their policy in e-commerce implementation.

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