Research Article

IMPACT OF E-SERVICE QUALITY ON CUSTOMER SATISFACTION IN MALAYSIA

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ABSTRACT

This study referred to E-S-QUAL model of determinant of electronic service quality in online shopping context and, the purposed of the study is to determine the impact of e-service quality on customer satisfaction. Literature supports the concept that quality of e-services are interlinked concepts and it has the linkage with the customer satisfaction as well.The data were collected from 363 undergraduate students in Universiti Teknikal Malaysia, Melaka (UTeM) by using multistage cluster sampling to identify the respondents. The study result indicated that the overall level of satisfaction on e-service quality by students was at a moderate level. The results showed that the customer satisfaction and the dimensions of e-service quality namely; efficiency, fulfilment, privacy and system availability are positively correlated with one another. Quantitative research method was employed to test the proposed hypotheses of the study. Data was analyzed by using PLS-SEM. The result highlighted that the four dimensions in e-service quality are a significant predictor that portrayed significant fit to the model of customer satisfaction. The findings of the study may contribute to the literature of same context and, to the online retailer as a guideline to formulate a new plan in improving customer satisfaction. Therefore, the present study is aimed at exploring the benefits of quality in e-services to deal with customer satisfaction.

INTRODUCTION

The internet has been widely used for purposes like social activities and electronic commerce. To date, the internet user has already surpassed half of the world's population which is at 3.6 billion (Meeker,2018) and this practice is still expanding and has inevitably become a game changer to the society, like changing consumer innovativeness and shopping style, provides a conducive business environment for firms or business person to commercialize their product around the globe without limit. While the phenomenon is steadily increased, AT Kearney (2015) provided a precise online retail statistic in 2014, which increased almost $840 billion, 20 % difference compared to the year 2013. The statistic also demonstrates the emergence of internet and online retails have allowed consumer to visit shops frequently through online, as a result, develop into a popular channel within the internet world (Bourlakis Papagiannidis & Fox, 2008). In another survey conducted by Klynveld Peat Marwick Goerdeler (KPMG) on the frequency of online shopping among 18,430 respondents in the year 2016, the report showed that the consumers made purchased at least once on

the internet in the past 12 months (KPMG,2017), this likewise shows that the online shopping has not solely provided functional and practical advantages over the conventional shopping among respondents (Vijay & Parsad, 2016), it is affordable and offering lower process that eventually leads to accretion of online shopping's user. As the user of online shopping drastically increased, the online shopping has become more diversified in many areas such as apparel, cosmetics, electronic devices and financial services.

The use of internet as a mean of purchasing and shopping is a growing trend. To retain the loyalty of customer on the product, organisation understood the importance of customer to any organisation, and when an organisation failed to provide good services, the firm has no revenues, profits and market values to compete with other organisation (Grönroos, Helnomen, Isoniemi & Lindholm, 2000) because customer does not only buy goods or services, but they buy because of its good services provided. This likewise indicates that online retails should provide a good service to ensure that the consumers are satisfied with the services and this probably aids the retailer to stay competitive. In relation to online shopping, Karim (2013) stated that customer satisfaction in online shopping could motivates the consumers to shop online and revisit the store. Therefore, the trend of maintaining a certain level of satisfaction in order to sustain their current consumers and attract prospective consumers as well as distinguish themselves apart from the others in electronic commerce market.

Electronic service (e-service) - an 'extent of which a web site ensures efficient and effective shopping, purchasing, and delivery' (Parasuraman, Zeithaml & Malhotra, 2005) is a growing phenomenon. To ensure the survival of online business in marketplace, retailer tries to fulfil customers' expectation and becoming a pioneer in presenting new services (Sharma, 2017), they also try to satisfy the customer by providing high service quality like presentable websites and lower price (Hung, Chen & Huang, 2014). However, most of the online retailers failed to provide quality services, as a result, they fail in business due to poor-quality services to the customers. To avoid such failure in online marketplace, it is important to investigate the online service quality and its impactful predictor on the customer satisfaction. As indicated by Yang & Fang (2004), retailers need to differentiate themselves through providing competitive service quality as online retailing is becoming competitive with numerous of player entering into the market. The growing of online retailer is tremendous which affect some of the start-up retailer unable to withstand the competition with the existing retailers.

Besides that, the level of satisfaction can vary depending on the interaction of customers with e-service quality in online shopping. It is difficult for online retailer to reconstruct their services by solely using a rough estimation of satisfaction assessment, which may lead to failure in aiding their business. Moreover, there is also

lack of sufficient study on the correlations between e-service quality and customer satisfaction in relation of online shopping context.

Therefore, this research tries to determine the effect of e-service quality towards customer satisfaction in online shopping as well as to distinguish the level of satisfaction and, also to illustrate the correlations of the dimensions with customer satisfaction. This research problem needed to be address as to aid the online retailer to survive in the marketplace as well as to provide a guideline on rendering a better service quality to customers.

The major finding from the study could be utilise by online retailers for formulation of plan and alternative to enhance their store management and growth, as well as to enable the retailer to customise their online store to become more efficient. The retailers could also refer to the findings as a guideline since the study provides a better insight on achieving customer satisfaction through e-service quality.

The research community will benefit from this research in term of the online shopping context presents in this study, which was less common in South East Asian context. Besides that, the researcher who are interested in the same topic could have an in depth of understanding on this study. Longitudinal study of e-service quality related to this sector should also be considered, as the trend of online shopping are constantly changing. The policy maker could employ the findings of this research to devise an appropriate framework to aid the start-up online store to attain the customer satisfaction and enable them to stay competitive within the e-commerce market. The framework would be a guidance for the start-up online store to have a basic understanding of a good online service quality.

Besides, this research could provide an insight to the general public such as brick-and-mortar firms, academy and government which related to the characteristics of service quality affecting the customer satisfaction. The general public needs to have awareness on this matter as online services are gradually being used in almost every sector.

LITERATURE REVIEW

The existence of e-service quality concept was derived from the traditional service quality to assess the website quality. According to Kandulapati and Bellamkonda (2014), the concept of service quality first arises in the early 1980s after the practitioners notice that the product quality solely could not gain any competitive advantage in a business. Service quality is meant to assess the excellence of services in a business. As stated by Parasuraman, Zeithaml and Berry (1988), service quality is a global judgement relating to the delivered services by an organization whereas Hoffman and Bateson (2017) defined service quality as "an attitude formed by a long-term, overall evaluation of a firm's performance". Service quality is generally a subjective concept whereby understanding customer's judgment upon the service

quality is essential to achieved effective management (Rust & Oliver, 1994). In order to measure the service quality, Parasuraman, Zeithaml and Berry (1988) have created a gap analysis model which known as SERVQUAL that provides numerous of potential applications. The SERVQUAL model is made based on five different dimensions which are tangible, reliability, responsiveness, assurance and empathy. The scholar Parasuraman, Zeithaml and Berry (1988) also mentioned that the SERVQUAL model can help various of service sector and retailing organizations in assessing customers expectation and perceptions of the service quality. The SERVQUAL model has been widely adapted and utilised by various sector such as healthcare (Ali, Basu & Ware, 2018), bank (Rijwani, Patel & Patel 2017), automotive repair (Izogo, 2015) and hospitality industry (Musaba, Musaba & Hoabeb, 2014).

Based on Santos (2003), e-service quality can be defined as the consumer overall judgement and evaluation on the standard of electronic service that provided in online marketplace. As the application of ICT increased in various disciplines, the e-service quality measurement has become popular in measuring the service quality of all these applications. Accordingly, there are multiple of researcher which had already developed a few instruments that are fit to measure e-service quality. Majority of e-service quality measurement was developed based on the combination of traditional service quality dimensions and also the web site features (Alnaser, Almsafir & Alshoura, 2014). As for the SITEQUAL (Yoo & Donthu, 2001), the scale contains 4 dimensions and the purpose of the scale is solely to measure the perceived quality of internet shopping sites, whereas the eTailQ (Wolfinbarger & Gilly, 2003) scale consists of 4 dimensions which can be compared to the traditional SERVQUAL model.

Ghosh (2018) explained that majority of researchers are appeal to E-S-QUAL model as it consists of holistic assessment of internet service quality which able to detain before and after aspects of e-service quality. There are many studies been conducted using the E-S-QUAL model such as online accommodation (Mihajlovic, 2017), online banking (Nyoni, Chiguvi & Nhlane, 2017), online tourism (Mohammed *et al.*, 2016) and online apparel (Noorshella, Abdullah & Nursalihah, 2015). This shows that the E-S-QUAL is suitable to measure in various online services and in different geographical settings.

Efficiency are generally one of the main factors needed in operating a web site. Parasuraman, Zeithaml and Malhotra (2005) explained efficiency as the facilitation of customers and also the speediness in accessing and utilizing the web site. In other word, efficiency could be considered as time saving and convenience use of website. Khan, Liang and Shahzad (2015) mentioned that convenience is essential in online shopping web site as the longer process needed in purchasing a product could result loss of customers, especially for those who are first timer which they will not revisit the web site anymore. Ranganathan and Ganapathy (2002) also stated that the main reasons of using online shopping is because of the easiness and it is generally time

saving. Petnji Yaya, Marimon and Casadesus (2016) admit that the efficiency factors should not be erased from the E-S-QUAL. However, the items which contained in efficiency dimensions are found to be less crucial than the other dimension's items in E-S-QUAL and, efficiency is also evaluated as the least significant dimensions than the other four dimensions in E-S-QUAL (Duman Kurt & Atrek, 2012).

Fulfilment are known as the level of web site's promises regarding the order delivery and products purchasable that provided to the customers are fulfilled (Parasuraman, Zeithaml & Malhotra, 2005). The fulfilment factor also relates to the accuracy display of a product where the product received by customer is the same as the product they had ordered and delivered within the time that had been promised (Vos *et al*, 2014). The fulfilment factors had been suggested as the most essential components in e-service quality by Rafiq, Lu and Fulford (2012), whereas Petnji Yaya, Marimon and Casadesus (2016) agreed that fulfilment is indeed a prominent dimension of E-S-QUAL, but only applicable to online retail that sold physical goods.

Privacy in a web site could affect satisfaction of a customer in online shopping context. Parasuraman, Zeithaml and Malhotra (2005) explained privacy as the degree of a web site which are safe to use and able to protect the customer information. Kim, Kim and Lennon (2006) also further explained that this dimension known as the protection of customer's personal information that integrated with risk perceived when process of online purchase is happening. Privacy also consists of features that does not shared the confidentiality of information which provided by customer during the beginning and, at the end of shopping process with other parties. (Akin, 2017). In E-S-QUAL context, Rafiq, Lu and Fulford (2012) stated that privacy in E-S-QUAL are only considered as a foundation prerequisite provided before using or purchasing from a web site.

System availability is another dimension that are listed in the E-S-QUAL model. Parasuraman, Zeithaml and Malhotra (2005), the developer of E-S-QUAL, defined system availability as the technical of the web site which function accurately. The technical software issues are the concern which associated to the process of purchasing in the internet (Fram & Grady, 1995).

Satisfaction is a term which has been utilize in various of studies context. The term was defined as the pleasure and disappointment of a person which effect from comparing between their expectation and the product perceived performance (Kotler, 2000). Oliver R. (2014) explained satisfaction in consumer perspective as the desire to be achieved from the utilisation of products and the patronization of services, or it could also consider as the pursuit of an individual. The definition of satisfaction by Hansemark and Albinson (2004) is almost identical to other researcher whereby customer satisfaction is defined as the overall consumer perspective towards the facility provider, or it is the psychological reaction of customers towards the difference between their anticipation and things they obtain, which relates to the needs and

goals' accomplishment. Levy and Weitz (2007) indicated that the evaluation of meeting or surpassing the core customers' expectation is the satisfaction.

In the marketing literature, there are two principal conceptualisation types of satisfaction which are the 'need-satisfaction' and appraisal-satisfaction (Theodorakis *et al*, 2004). The conceptualisation was further explained by Biscaia *et al.,* (2017) that need-satisfaction based on the designation, is the outcome of meeting the corresponding needs where it is related to satisfaction consideration as well as motivation's idea and, the assessment of need-satisfaction also will be identified through the evaluation against the expected results. In contrast, appraisal satisfaction is a satisfaction that is more to the construct of service quality.

The researcher Angelova and Zekiri (2011) also stated that the higher the satisfaction of customer towards the products and services provided, the higher the chances for business to success, since customer satisfaction may lead to repetition of purchase, mouth marketing related to positive word and also guide to brand loyalty. It was suggested by Karunakaran and Thusyanthy (2016) that the organization may considered to construct a mind map associated to the customer satisfaction as it is essential for organization to reach their target and also able to survive in the industries. It was agreed by Chen, Hsu and Lin (2010) that the customer satisfaction is an important key which could aid in customer retention as well as enable the online stores to grow in long term period. In the retailing context, customer satisfaction can be defined as the evaluation of after use products and also an evaluation of meeting or exceeding the customer's expectation based on the store or a product that been provided (Vesel and Zabkar, 2009). The customer satisfaction could also able to bind the emotions, brand loyalty and generate a sense of belongings among the customers (Hanif, Hafeez & Riaz, 2010).

Online retailers needed to satisfy the satisfaction of customers as it is not only a key for repetition purchases but, it also helps the many business in management. In an online store, customer is easily satisfied if their purchases are operating smoothly and, this shows that customers appeared to be more satisfied and will repeat their purchases on the same web site if the customers face low level or less problems during the process of purchasing (Kumar & Velmurugan, 2017). It was also proven by Cao, Ajjan and Hong (2018) that customer satisfaction had a big role impact on online shoppers and the customer satisfaction's role could assists to predict the future purchase intention of the customers. The theoretical framework of this study has derived based on the review of literature which as shown in Fig. 1. The independent variable is the e-service quality which adopted from the E-S-QUAL model and it consists of four dimensions which will be used in this study are efficiency, fulfilment, privacy, and system availability. The dependent variable illustrates in this study is the customer satisfaction of the students.
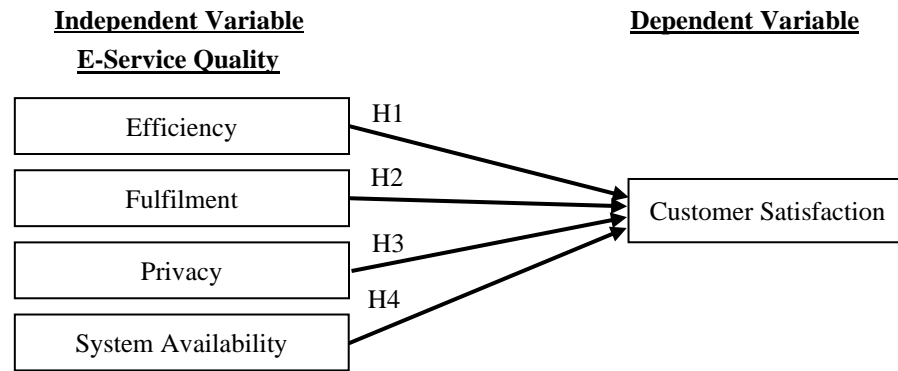
Fig. 1. Theoretical Framework

Most of the previous study shown that efficiency was one of the important factors to influence the satisfaction of customers and, it was essential for retailer to practice efficiency in their web site. The statement was supported by Elsharnouby and Mahrous (2015) which indicated that retailer should provide an easy navigation web that have easier customisation where customers could easily utilize the web site. Based on the studies, the expected hypothesis is: -

H1: THERE IS A SIGNIFICANT RELATIONSHIP BETWEEN EFFICIENCY AND CUSTOMER SATISFACTION.

Next, fulfilment is related to the promises that was provided by a web sites which need to be fulfilled accurately in order to retain the customer satisfaction. Based on Shergill and Chen (2005), fulfilment is one of the factors that could result in highest satisfactory among the customers in online shopping and this was proven by Kandulapati and Bellamkonda (2014) that the fulfilment has positive influence and significant effect on the customer satisfaction. Jain *et al.,* (2017) also stated that the fulfilment is the crucial interaction between the online retailers and customer, and it is an essential process in online retailing. The following showed the derived hypothesis from the studies: -

H2: THERE IS A SIGNIFICANT RELATIONSHIP BETWEEN FULFILMENT AND CUSTOMER SATISFACTION.

As mentioned in the previous studies, privacy is a critical issue in online shopping as customer are concern with their information would be exposed to the public after using the web site. It was proved by Shukla (2014) that customer with higher privacy concern and perceived risk could cause low process satisfaction and, it eventually will affect the purchase intention of customers while some of the studies does not agree that privacy have any significant influences on customer satisfaction with using the web sites (Kim & Stoel, 2004). Technically, Radziszewska (2018) indicated that privacy has great impact on the shopping experiences as well as e-commerce's quality level and, privacy also considered important to evaluate the online service quality and it has the most influential upon customer satisfaction. The statement was proven by Giovanis and Athanasopoulou (2014) that privacy can indeed directly affect the satisfaction and the trust of a customer. Thus, the hypothesis is: -

H3: There is a significant relationship between privacy and customer satisfaction.

System availability is part of the technical function in web site which could affect the customer satisfaction in relation to the availability of a web site. Based on Zhuang and Babin (2015), the customers will feel dissatisfied with the experience provided in the web site, if the level of system availability on the website is low. However, in the private shopping sites, it is shows that the system availability in E-S-QUAL does not have any significant effect on the satisfaction which might due to the standardization of performance issues in most of the private shopping sites (Durmus *et al*, 2015). This shows that the system availability may or may not affect the customer satisfaction in the online store based on the context of web site. Therefore, it could be hypothesized as the following: -

H4: There is a significant relationship between system availability and customer satisfaction.

The research design in this study is a correlational research whereby the purpose of it, is to determine the effect of e-service quality on customer satisfaction of undergraduate students in Universiti Teknikal Malaysia, Melaka (UTeM). The quantitative research will be selected as the mean to collect data and information which related to the study and additionally, the research is a cross-sectional research that able to draws on the broad sample of the population to provide details regarding the demographic background, the dimensions of e-service quality and also customer satisfaction.

RESEARCH METHODOLOGY

The research strategies used in this study is the survey approach, as surveys mostly used in quantitative research and involved in sampling a segment of the population (Bryman & Bell, 2011), as well as compatible to be used in short-term research. The measurement and display of scores generated between the variables relationship as well as the analysis were to be presented in subsequent chapter. The method to collect primary data are mostly through the experimental, the social survey, qualitative research as well as solicitated and spontaneous data (Hox & Boeije, 2005). In contrast, the collection of secondary data could be found through the history records, published paper or cross cutting sources (Flowerdew & Martin, 2005)

Data collection are considered to be essential as the methodology and analysis technique used by the researcher, could determine the ways of the information been collected and also the ability of generating the explanations from the information collected (Paradis *et al.*, 2016). In this present study, the questionnaire will be used to collect the data and information regarding the topic.

Questionnaires are constructed to collect data from large and various different group of people and, the procedure of questionnaires are less expensive than the other

method as is only mailed the questionnaires with simple explanation to the respondents (Gangrade, 1982). In this research, the collection of data will be carried out using the self-administered questionnaire in UTeM by the alternative of drop-and pick surveys. Self-administered questionnaire is defined as a questionnaire that construct particularly for respondents to complete without the interference of the researcher to collect the data (Lavrakas, 2008). The questionnaire consisted of three major sections which included the demographics background. There are 15 items related to the e-service quality scale, which is E-S-QUAL's dimensions namely efficiency, fulfilment, privacy and system availability which was adapted from the previous research done by Parasuraman, Zeithaml and Malhotra (2005), whilst, the 4 items in customer satisfaction were taken from Lien, Wen and Wu (2011) and Sun *et al.,* (2015). The items in questionnaires will be evaluated using the five-pointed Likert scale which range from 1 = Strongly Disagree to 5 = Strongly Agree.

The theoretical population or known as the target population in question is the full-time student in UTeM. With that in mind, the main focusses of the sample in this study is directed towards the full-time undergraduate students who are currently pursuing their study in FTKEE and FPTT faculties of UTeM, which all years of student (from first year until fourth year) are included. These groups were chosen by picking randomly from the population of full-time undergraduate students in UTeM. The Fig. 2 below shows the target population, sampling population and also the sample of the research.
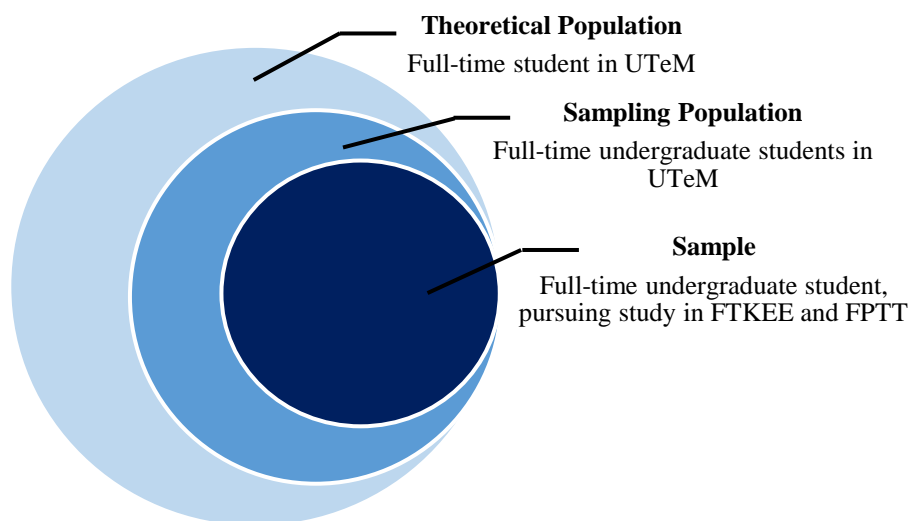

Fig. 2. Target Population, Sampling Population and Sample of the research

The sample size needed in this research are obtained through the use of formula shown in Fig. 3. The total number of undergraduate students which currently pursuing their full-time studies in UTeM are 11,132 and through the use of formula, there are 95% of confidence level as well as 5% of confidence interval which yielded 387 students and this numerical are the required sample size use in the research.

$$n = \frac{N}{1 + N(e)^2}$$

Where:

N= Number in population

e = Confidence interval

n= Sample size

Fig. 3. Formula for known population
(**Source:** Adapted from Yamane, 1967)

$$n = \frac{11,132}{1 + 11,132(0.05)^2}$$

$$n = 386.13$$

$$n \approx 387$$

This research had distributed the questionnaires to the target students through hardcopies and e-survey. The responses provided a 93.8% (n = 363) of the intended data collection from 387 students due to the scenario of damaged, missing and incompletes questionnaires.

Besides that, the multistage cluster sampling technique is adopted in this research in order to collect data more easily. Multistage cluster sampling technique can be defined as a method of narrowing the broad population into small sample through step-by-step process (Wilson, 2014). Consequently, this technique was chosen in the research because it is affordable, and the implementation of this techniques are much easier compared to the other methods. It is also compatible with the time horizon as this study conducted in short time period. The sampling frame of this research is according to the list of all 8 faculties in UTeM where all of the faculties consists of heterogeneous population. Analyses are done by using the statistical techniques. In this study the highly accepted style of SEM-PLS analysis is used, which is suggested by the past studies like (Chin, 2012). In data analysis, validity and reliability of the measurement model is calculated which is followed by the validation of structural model.

FINDINGS AND RESULTS

The descriptive statistic was used to identify the percentage, frequency, mean, standard deviation, maximum and minimum value of variables. The descriptive analysis was also used to describe the demographic data which was gender and years of education of students as well as the frequency of e-service quality. The data used for analysis was reported from 363 students, where the data contained 50% of FPTT students and other 50% of FTKEE students in UTeM.

Based on the projection above, more than half of the respondent were female with total of 188 students equivalent to 52% whereas, 175 out of 363 students were male respondents with the percentage of 48%. Thus, the female students are the dominant respondent in the study.
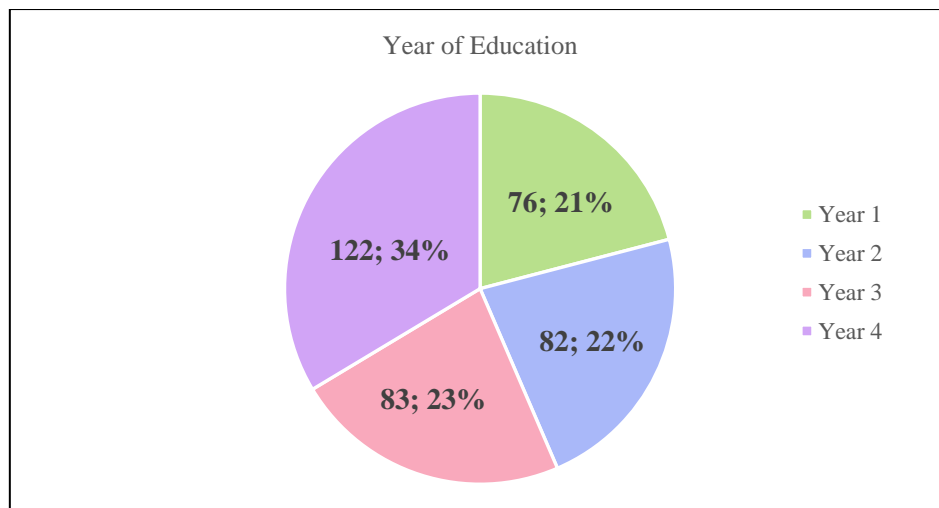
Fig. 4. Pie chart of student's year of education

Based on Fig. 4 above, most respondents' data were obtained from the fourth-year students which was 122 (34%) students out of the total respondent, whilst 23% of the respondents were third-year students and they are the second highest respondents in the study. Each first and second year students had a total of 76 (21%) and 82 (22%) respondents, which both years added together had contributed 43% of respondents for the study.

The internal consistency among items was used to determine reliability of a scale used in a research instrument. For this purpose, Cronbach's alpha is the most commonly used measure to determine internal consistency which determines the reliability of a scale (Hair *et al.,* 2014).

Table I. Internal Consistency Measures

	Cronbach's Alpha	Composite Reliability
Customer Satisfaction	0.870	0.906
Efficiency	0.858	0.904
Fulfilment	0.845	0.903
Privacy	0.869	0.911
System Availability	0.838	0.892

The values of 0.8 or 0.9 in advance stages of a research indicate the internal consistency reliability of a measurement model, while values below 0.6 indicate low reliability. The higher composite reliability (CR) value indicates higher consistency of items. For the present study, both composite reliability (CR) and Cronbach alpha (CA) values are greater than 0.8 and 0.9 as shown in table I. These values showed a good level of construct reliability and thus revealed that the items used in the present research instrument to represent constructs have high internal consistency.

According to Hair et al. (2014), convergent validity determines the extent to which a measure correlates with an alternative measure of same construct. Thus, convergent validity ensures that an item measures its projected construct.

Table II. The Values of AVE

	Average Variance Extracted (AVE)
Customer Satisfaction	0.660
Efficiency	0.702
Fulfilment	0.756
Privacy	0.720
System Availability	0.673

For the present study, the convergent validity was measured by the value of average value extracted (AVE) as suggested by Waddock and Graves (1997b). An AVE value of 0.50 and above showed the acceptable convergent validity. Table 2 contains the values of AVE for the convergent validity of the constructs used in the present study. Since, all the values satisfied the minimum threshold value (0.50) of AVE, thus it showed the acceptable convergent validity for measurement model of the present study.

The result given in Table 3 showed the values estimated through Fornell-Larcker criterion for measuring discriminant validity. Table 5 the values of Fornell-Larcker criterion for measuring discriminant validity.

Table III. Showed Fornell-Larcker criterion

	Customer Satisfaction	Efficiency	Fulfilment	Privacy	System Availability
Customer Satisfaction	0.813*				
Efficiency	0.383	0.838*			
Fulfillment	0.166	0.064	0.870*		
Privacy	0.243	0.088	-0.019	0.849*	
System Availability	0.445	0.284	0.287	0.120	0.820*

According to Urbach and Ahlemann (2010), discriminant validity is used to describe how constructs are different from each other. In this method (Fornell and Larcker, 1981), the value is obtained when the square root of AVE of a construct is greater than its correlation with other constructs. The values of discriminant validity were obtained through running algorithm function in Smart PLS software.

The next sections will describe the results which were used to validate the structural model of this study. The validity of the structural model, as stated earlier in chapter-3, was determined by assessment of multicollinearity, coefficient of determination (R), effect size (f), and path coefficients. In addition to this, mediating relationship, as proposed in the present study was also assessed through these measures.

Table IV. Coefficient of determination (R^2)

	R Square
Customer Satisfaction	0.304

Coefficient of determination (R) is used to determine the goodness of structural model (Hair et al.,2012). It is further explained that the value of R determines the amount of

variance in dependent variable caused by independent variable(s). Thus, the higher value of R is desirable. The value of R in the range of 0.02 – 0.12 are considered lower, 0.13 – 0.25 are moderate, and 0.26 or greater are substantial (Cohen, 1988). However, the Hair et al. (2012) stated that the appropriate value of R depends upon the framework of the research study. Since the present study used both independent E-Services and Customer Satisfaction dependent variables, therefore coefficient of determination (R) value will determine the amount of variance counted in the turnover intention by the career management. Similarly, in case of direct relationship between career management and organizational commitment, value of R will establish the impact (amount of variance) of career management on affective commitment. the value of R confirmed that almost 30.4 percent of change effect in Customer Satisfaction is caused by E-Services.

The fitness of proposed research model of the present study was evaluated through the value of f which explains the effect size. According to Cohen (1988), the value of f is measured by increase in R relative to proportion of variance of the endogenous variable which remains unexplained. He further explained that values of f between the ranges of 0.02-0.14 are considered weak effect, 0.15-0.34 are moderate, and 0.35 and above show strong effect. For the present study, model fitness through f was measured and the values obtained for each path are presented in Table 5.

Table V. model fitness through f^2

	Customer Satisfaction	Effect
Efficiency	0.095	weak effect
Fulfilment	0.004	weak effect
Privacy	0.046	weak effect
System Availability	0.131	weak effect

These findings of f revealed the fitness of structural model and proved that all four dimensions of E-Services has a weak effect on Customer satisfaction.

The structural model of research study is also evaluated through path coefficients. The values of path coefficients are useful to indicate the strength and significance of the relationship between two latest variables. In SmartPLS, there is technique called "bootstrapping" is used to obtain values for evaluation of relationships (paths) between independent and dependent variables. Moreover, t-statistics and p-values are assessed to verify the significance of all the paths exist between these variables. According to Hair et al. (2014), when the empirically measured statistical t-value is greater than the critical value, the coefficient is considered significant at a specific confidence level. For the present study, t-value of 0.95 is used at a significance level of 0.05.

Hair et al. (2014) further explained that nonparametric statistical test called bootstrapping is carried by PLS-SEM in order to measure the significance of estimated path coefficients. Moreover, they stated that the values of coefficients are ranged

between -1 and +1. Thus the values of path coefficients close to +1 indicated strong relationship, while values of coefficient close to -1 show weak relationships. The empirically measured t-values, p-values and path coefficients values between variables in the present study are given in Table 9. The acceptance or rejection of hypothesis was based on path assessments. Thus, based on the results given for the present study, all hypotheses were supported at a significance level of 0.05.

Table VI. Path Coefficients

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	2.5%	97.5%
Efficiency -> Customer Satisfaction	0.269	0.034	8.001	0.000	0.196	0.331
Fulfilment -> Customer Satisfaction	0.058	0.026	2.189	0.029	0.004	0.108
Privacy -> Customer Satisfaction	0.181	0.030	5.990	0.000	0.129	0.243
System Availability -> Customer Satisfaction	0.330	0.033	9.928	0.000	0.257	0.395

Based on the results obtained through PLS-SEM, structural model was used to test the hypothesis of present research study. The values of path coefficients, t-values, and p-values at significance level of 0.05 were evaluated to test the hypothesis. On the basis of these values, the entire hypothesis of the present study was accepted. This study proposed four hypotheses to evaluate the direct relationships among proposed variables. Below is the fig. 5 representing the path coefficient and their t-statics and p-values of each relationship.
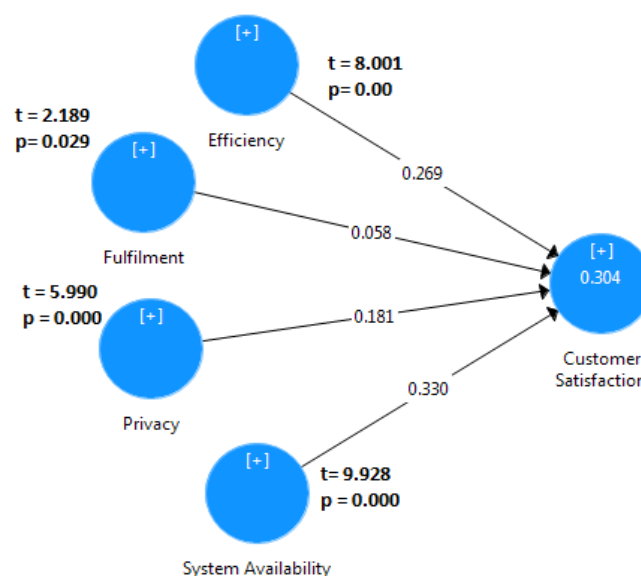

Fig. 5. Path coefficient and their t-values and p-values

H1: THERE IS A SIGNIFICANT RELATIONSHIP BETWEEN EFFICIENCY AND CUSTOMER SATISFACTION.

The result revealed that path coefficient between Efficiency and customer satisfaction was 0.269. For the measuring significance of this relationship, the t-value was 8.001

which is greater than critical value of 1.96. Similarly, the p-value of 0.000 was also found significant and less than the threshold value of 0.05 (Hair *et al.,* 2006). These statistics presented sufficient empirical evidence that the hypothesis H1 is accepted and the present study determined a significant relationship between Efficiency and Customer Satisfaction.

H2: THERE IS A SIGNIFICANT RELATIONSHIP BETWEEN FULFILLMENT AND CUSTOMER SATISFACTION.

The findings showed that path coefficient between fulfillment and customer satisfaction is 0.058. The t-value of 2.189 was found significant as it is greater than critical value of 1.96 and the p-value of 0.029 was also significant and less than the threshold value of 0.05. Thus there was empirical evidence sufficient to accept hypothesis H2 and the present study established a significant positive relationship between Fulfillment and Customer Satisfaction.

H3: THERE IS A SIGNIFICANT RELATIONSHIP BETWEEN PRIVACY AND CUSTOMER SATISFACTION.

According to the results, the path coefficient value between privacy and customer satisfaction was measured as 0.181. The t-value of 5.990 measured the significance of this path as it is larger than the critical value of 1.96 and the p-value of 0.000 also proved the significance of path coefficient. Based on the empirical evidence, hypothesis H3 was accepted and the present study established a significant positive relationship between Privacy and Customer Satisfaction.

H4: THERE IS A SIGNIFICANT RELATIONSHIP BETWEEN SYSTEM AVAILABILITY AND CUSTOMER SATISFACTION.

The value of path coefficient between system availability and customer satisfaction was measured as 0.331. The t-value is 9.928 which is greater than critical value of 1.96 and the p-value of 0.000 which is also significant and less than the threshold value of 0.05 proved the significance of this path. These statistics provided sufficient evidence to accept hypothesis H4 and also determined that there is a significant positive relationship between System Availability and Customer Satisfaction.

DISCUSSION AND RECOMMENDATIONS

All variables in the study also shows a positive relationship with the customer satisfaction of students. These positive relationships indicated that if one variable moves higher or lower, then the level of customer satisfaction will move in the same direction with the same magnitude based on that one variable's movement. Based on the finding in this study, system availability is the strongest predictor in influencing the level of customer satisfaction among the other predictor in electronic service quality. This shows that an online retailer needs to emphasize on system availability for customers by delivering their expectation to them. The emphasis of fulfillment may lead to increase of retailer popularity and enable them to achieve a good

reputation as a good fulfilment creates a positive experience for customer which will eventually increase the satisfaction of customer.

Every research consists a limitation that will eventually affects a study's result. One of the research limitations are the specification area conducted in this study as the area only focuses on Universiti Teknikal Malaysia, Melaka (UTeM), which neither represents the entire Malaysia nor the culture and background of the nation. Furthermore, time restriction has caused the research to be less validating since the time frame given are insufficient to collect high-calibre information and it is also insufficient for the researcher to examine more characteristics on this study

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