Journal of Optimization in Industrial Engineering
Vol.15, Issue 2, Summer & Autumn 2022, 249- 255
Doi: 10.22094/joie.2022.1962052.1970

Research Article

Investigation of Customer Purchase Intention Towards Car Battery On-Site Delivery Services

Hairul Rizad Md Sapry [a,*], Nurfaziq Nordin[b], Abd Rahman Ahmad [c], Shathees Baskaran[d]

[a] *Universiti Kuala Lumpur, Malaysia Institute of Industrial Technology (UniKL MITEC), Malaysia*
[b] *Universiti Kuala Lumpur, Malaysia Institute of Industrial Technology (UniKL MITEC), Malaysia*
[c] *Universiti Tun Hussion Onn (UTHM), Malaysia*
[d] *Universiti Teknologi Malaysia (UTM), Malaysia*

Received 28 June 2022; Revised 10 July 2022; Accepted 14 July 2022

Abstract

This study investigates the factors that influence customers' purchase intention among Bateriku.com customers. Through a self-administered questionnaire, data were collected from eighty-eight (88) customers who had experience using the service of on-site delivery of a car battery. This study is aimed to investigate perceptions of the customer on a new business model introduced by Bateriku.com for the purchase of the car battery and how this perception impacts the actual purchase that the customers make. This study will turn out to be a benchmark in comparing with the traditional purchase processes of the car battery and to understand the factors influencing the customers towards their purchase of the car battery using a new business process. Three (3) independent variables were identified namely technology, service marketing, and people to investigate its impact on actual purchase by employing multiple regression analysis. The results of the study indicated that service marketing has a significant influence on customer purchase intention for the car battery on-site delivery. The results also showed the impact of technology in improving customer confidence towards the new business model. The recommendations are also provided to Bateriku.com to exploit the advancement in technology to minimize further human interaction during the inquiry process to introduce process standardization for efficient operation. This study presents a foundational framework for future researchers to embark on new avenues in producing in-depth insights about new business models in acquiring car batteries and related services.

***Keywords*:** E-commerce;Customer Purchase Intention; Car Battery On-Site Delivery

1. Introduction

The dependency on a single technological platform as a business solution is no longer a strategic decision considering the developments of the Industrial Revolution 4.0. Therefore, an integration of different technologies to create new ways of running internal business processes is a critical aspect for the organization in ensuring sustainable operation. In other words, it improves the demand and supply balance between customers and the organizations apart from opening new business opportunities for new entrepreneurs. These new approaches are not only effective but also measurable in ensuring that the organizations are continuously improving their productivity and efficiency in delivering products and services to their customers. (Manuel Silverio-Fernández, 2018: Lee, Kao, & Yang, 2014)

This study is aiming to investigate the perception of customers about a new business model for the purchase of a car battery and how this perception impacts their actual purchase. This study will turn out to be a benchmark in comparing traditional purchase processes and technology-driven purchase processes in making a purchase decision. This study also envisages discovering factors influencing the customers' intention towards the purchase of car batteries through this new business process.

*Corresponding author Email address: hairulrizad@unikl.edu.my

2. Research Background- Bateriku.com

In this study, Bateriku.com which is located at Pasir Gudang was selected as a subject of research to understand the general market perception towards their business model. Bateriku.com is a company that provides a great value of on-site car battery delivery and installation services with just a phone call away or through a WhatsApp application or their website. Upon receiving inquiries through the aforementioned platform, the help desk team will contact the customer immediately to gather preliminary information about the issues that led to the battery malfunction such as battery condition and size, battery type (wet/dry), brand, etc. This information will then be analyzed, and feedback will be provided to the customers about the potential problem and estimated cost for the battery replacement if needed. Based on the initial information and online discussion with the customers, Bateriku.com will suggest for physical inspection of the battery condition at the site. If agreed by the customer, Bateriku.com will assign a technician for the site visit inspection. The details about the site visit assignment can easily be monitored on the webpage of Bateriku.com. The site will provide information about the serviceman (technician) and the estimated time of arrival (ETA). At the site where the breakdown has occurred, the technician will perform a thorough check to identify the causes of battery malfunction. Upon this check, the technicians will not

immediately change the battery and also will not charge any cost if the problem is caused by reasons other than battery malfunction. Therefore, customers will only pay the price of the battery if they are agreeing to change it. This will save customers money from being wasted on unnecessary things. The company also provides a floating battery service should customers' existing battery is in a weak state and requires further inspection at their office. This is where the customers have an option either to replace or re-charge the battery. These kinds of services are needed by anyone, especially by those who are less knowledgeable about batteries and issues in regard to vehicle breakdowns. In such cases, customers will just have to relax and wait for Bateriku.com serviceman to come and to perform their services. This business model is different from the traditional practices where the customers are required to pay the charges for every visit by the foreman to attend to the breakdown. It may also take a longer time to complete the service since the foreman will need to return to the workshop to find a suitable battery for replacement. In the worst-case scenario, the vehicle will need to be towed to the workshop for further inspection and repair services

To reach and fulfill customer demands accurately and timely, Bateriku.com had developed technologies that can be accessed from any smartphone and electronic device connected to the internet. This device will enable the customers to monitor and track the assignment progress in real-time.

3. Bateriku.Com Business Model Challenges

The introduction of car battery on-site delivery services is still new for most Malaysians. A business model which combines technology with physical presence through WhatApp and website lacks its introduction not only among the potential customers but also in the scholarly literature. This has created a curiosity among the users on how this service is functioning, particularly concerning the hiring of the services, the transacting and methods of payments, the service levels in terms of waiting time, also log and track of previously used services. Although e-commerce technology has revolutionized the process of buying and selling the car battery, the nature of this transaction which uses the internet, network, and web-based technologies are still associated with numerous challenges linked to security, protection, and trust. (Udo, 2001; Roca, Garcia and Vega, 2009; Chen and Barnes, 2007; Abdulghader et. al., 2012).

The primary goal of a business is to offer products and services that best serve its consumer needs. A business that fulfills the customer needs by meeting or exceeding their satisfaction tends to be more successful than its competitors on the principle that a satisfied buyer will make a repetitive purchase. Moreover, the technology advancement in Internet accessibility is capable of penetrating wider customer segments for this type of business model. Despite numerous benefits from an Internet accelerated business model, it is also an undeniable reality that some customers are traditionally conservative in their approach to adopting a new thing. Thus, the purpose of this study is to understand the consumers' behavior towards the Bateriku.com business model.

4. Consumer Behavior

A business model based on technology adoption and acceleration normally owns a unique customer characteristic. Usually, this type of customer segment accepts visual interaction in substitution to physical interaction between the seller and the buyer. No assurance of a relationship is built between the customer and the seller despite long hours of exchanging the information at the seller's website (Zuroni & Goh, 2012). The perceived ease of use does not affect the behavioral pattern other than the security and privacy issues (Demangeot, & Broderick, 2010). Customer attitudes are usually determined by two factors: i. trust, and ii. perceived benefits (Mohammad Anisur Rahman et. Al, 2018; Hoque, Ali, & Mahfuz, 2015). Moreover, information quality, merchandise attribute, website design, transaction capability, payment, security/privacy, delivery, self-consciousness, state of mind, the consumer's time sense, and customer service are strongly predictive for this type of business (Katawetawaraks & Wang, 2011; Liu, He, Gao, & Xie, 2008; Mudambi & Schuff, 2010).

In another study by Vegiayan, Ming, and Harun (2013), information quality and purchase quality are linked with the post-purchase quality and statistically significant in the case of customer satisfaction in Malaysia. Koufaris (2012) identified that both shopping enjoyment and perceived usefulness (website) are strong predictors of the intention to re-purchase over online.

Taste, preference, and choices are varying among the consumers which depict the processes used by consumers in making a purchase decision (Virender, 2016 Vrender. (2016)

5. Factor Influencing Consumer Preference

As discussed previously, the Bateriku.com business model is different from the online business model. It combines web-based applications and online communication using a telephone or WhatsApp platform. Hence, the reference in the online literature review is not fully applicable to apply for this study. As such, the study proposed a conceptual framework as a guide in the investigation of the subject research. Based on the extensive literature review, the following variables are proposed to investigate customer perception towards the Bateriku.com business model.

5.1. Technology

Technology has dramatically changed how customers learn about services. Customers' ability to search the web and view photos of service locations, compare prices, and even experience services through virtual tours has changed the amount and type of information customers have before purchasing services. The availability of this information directly influences their expectations and ability to compare and judge services. In earlier days, customers found it difficult to gather this type of information and could not compare services as easily as they could intangible goods that were displayed side-by-side in a retail store. To some extent the Internet now provides this same type of comparability for services.

While word-of-mouth communication has always been critical for learning about and forming expectations for service providers, technology has changed the nature of word-of-mouth communication. Web sites now include customer recommendations, glowing praise, and horror stories for just about any type of service imaginable (Ward & Ostrom, 2006). And, groups have been formed online for people who are interested in particular service categories to exchange information. Many companies even sponsor these types of interactive websites themselves to involve customers in helping each other. Technology has significantly impacted how customers learn about, form their expectations of, and judge services. Given these changes, it is clear that companies face new challenges as well in understanding these new expectations and designing and delivering services to meet them.

Technology is also providing new opportunities for delivering existing services in more accessible, convenient, and productive ways. Technology facilitates basic customer service functions (bill paying, answering questions, checking account records, tracking orders), purchase transactions (both retail and business-to-business), and learning or information seeking. Over the past few decades, companies have moved from face-to-face service to telephone-based service to widespread use of interactive voice response systems to Internet-based customer service and now to wireless service. Technology also facilitates transactions by offering a direct vehicle for making purchases and conducting business. Finally, technology provides an easy way for customers to learn, do research, and collaborate. Access to information has never been easier. For example, more than 20,000 websites currently offer health-related information, resulting in consumers having an increasing involvement in their health decisions and care.

5.2. Service marketing

According to Bonnie, Farber, and Canziani (1997), certain basic characteristics differentiate a service business from another organization that simply markets the product. Alternatively, the company may be supplying products, but have a strong service element associated with that role, for instance, the retail business (Valarie, 2009). Gronroos (2008) indicated that in service industries, three extra elements have been added to the marketing mix which is mainly people, process, and physical evidence. According to Valarie, (2009) in regards to service marketing, people refer to who gives the service, the process is how the service is given and physical evidence refers to the environment in which the service is given. Michael and Ferrell (2010) shared their view that services are intangible and inseparable from the provider of the service. It is often difficult to maintain consistency of service and the company might face a constant challenge of matching demand with supply as service cannot be stored. Customers do not end up owning a physical item but leave you having enjoyed an experience (Douglas & John 2007).

5.3. People

According to Bonnie et al (1997), many services depend on direct, personal interaction between customers and a firm's employees such as getting a haircut or eating at a restaurant. The nature of these interactions strongly influences the customer's perceptions of service quality (Bonnie et al. 1997). According to Jerome (2008), customers will often judge the quality of the service they receive largely on their assessment of the people providing the service. Successful service firms devote significant effort to recruiting, training, and motivating their personnel, especially but not exclusively those who are in direct contact with customers (Jerome, 2008). Booms and Mary (2006) indicate that services are provided by people for people, and if the people providing the service are inefficient, rude, or messy, the customer's experience will be spoilt. Whilst good customer care is important whatever you are selling, and if you are selling services then your product is ruined (Booms & Mary, 2006).

6. Conceptual Framework

Based on the discussion on the previous research, the following conceptual framework was developed for further investigation:

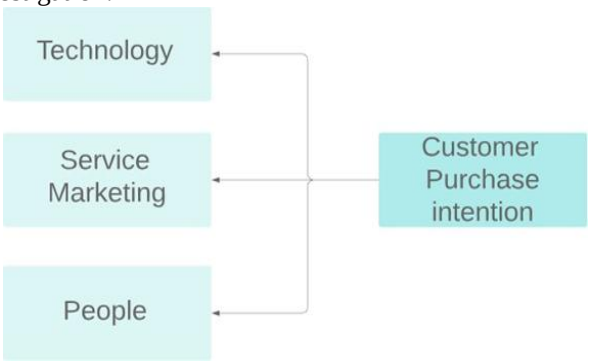

Fig. 1. Conceptual model

7. Research Approach

The research adopts a quantitative method and a set of questionnaires was developed and distributed to the respondent. The target respondents of this study were Bateriku.com's customers who had the experience of purchasing the car battery from Bateriku.com. A list of customers that had experience using the Bateriku.com service was provided by Bateriku.com to facilitate the investigation. Through a self-administered questionnaire, eighty-eight (88) respondents responded to the questionnaire. Multiple regression analysis was used to examine the relationship between technology, service marketing, and people to the customer purchase intention. A five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5) was used to assess all the variables. Both descriptive and inferential analysis was used to present the data findings.

8. Discussion on Findings

This study is important to understand the customer perspective on the Bateriku.com business model which discussion is arranged on the following approach.

8.1. Descriptive Analysis

This section discusses the descriptive statistics of the data focusing on technology, service marketing, and people.

In general, the respondent was satisfied with the adoption of technology by Bateriku.com. However, the respondents commented on the technology standards used by Bateriku.com which is not an up-to-date technology as compared to other similar services offered by the competitors. About 38% of the respondents suggested Bateriku.com use the latest technology. The finding indicates customer awareness of the development of technology that has been used in the e-commerce business model. This finding should be interpreted as an opportunity for Bateriku.com to improve in this aspect.

While in service marketing, only 26% of the respondents reported their satisfaction with the coverage area of Bateriku.com which is the lowest rating among the other service marketing areas asked the respondents. This is consistent with the finding by Valarie (2009) which suggests that physical evidence of the service is something being valued by the customers who enjoyed the experience (Douglas & John 2007).

On-time arrival of the service team to the site has been rated the lowest by the respondents indicating an opportunity for improvement that needed to be addressed by the Bateriku.com

Table 1
Descriptive Statistics

	Factors	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Technology	The technology used by Batteriku.com is easy to use and understand by the	7	17	17	30	13	3.298	1.200
		8%	20%	20%	36%	16%		
	Bateriku.com use the latest technology in the online service	10	16	26	20	12	3.095	1.219
		12%	19%	31%	24%	14%		
	The introduction of mobile application is helping to reduce the queuing process	7	9	20	21	27	3.619	1.270
		8%	11%	24%	25%	32%		
	Registration of mobile application for Batteriku.com is too complicated	14	23	34	7	6	2.619	1.086
		17%	27%	41%	8%	7%		
	The features of mobile application are interactive and easily influence the customer	9	12	16	35	12	3.345	1.207
		11%	14%	19%	42%	14%		
Servis marketing	The service offered is satisfying because they have door to door services	6	15	25	28	10	3.250	1.107
		7%	18%	30%	33%	12%		
	They covered almost everywhere because they have a sizeable fleet to service the	10	27	25	14	8	2.798	1.149
		12%	32%	30%	17%	10%		
	The service provided is similar as the advertisement	9	14	25	29	7	3.131	1.128
		11%	17%	30%	35%	8%		
	Customer services provided by batteriku.com are very helpful and able to	6	15	20	28	15	3.369	1.180
		7%	18%	24%	33%	18%		
	Information of battery requirement and technical advice is helping customers to	6	16	18	25	19	3.417	1.234
		7%	19%	21%	30%	23%		
	Batteriku.com accepts feedback for make improvement in their services	8	14	25	24	13	3.238	1.188
		10%	17%	30%	29%	16%		
People	Helpdesk staff is very friendly and technically sound in identifying the problem	12	9	26	25	12	3.191	1.237
		14%	11%	31%	30%	14%		
	The service team arrive on time as agreed in the schedule assignment	8	20	29	20	7	2.976	1.097
		10%	24%	5%	24%	8%		
	The service team arrives on time as agreed in the assignment schedule	16	11	18	27	12	3.095	1.341
		19%	13%	21%	32%	14%		
	The representative has a good communication skill with customer	7	14	22	31	10	3.274	1.134
		8%	17%	26%	37%	12%		
	Representative of batteriku.com has their own trademark that easily being recognise	10	13	18	27	16	3.310	1.280
		12%	16%	21%	32%	19%		

Source: Survey findings

8.2.Inferential analysis

The information obtained from the descriptive analysis has provided general information regarding the current status of the research subject. However, this information is not sufficient to report various issues in understanding the customer intention towards Bateriku.com services. For this reason, additional statistical analysis was performed to address the following sub-research questions.

In this section, standard multiple regressions were used to investigate the influence of identified factors on customer purchase intention. According to Pallant (2005), there are three steps in analyzing results using the standard multiple regression techniques. They are i. checking the assumptions, ii. evaluating the model, and iii. evaluating each of the independent variables

8.2.1. Step 1: Checking the assumptions

Before using the standard multiple regression techniques to analyze the result, assumptions of multiple regressions were tested as follows:

8.2.1.1. Sample size

Tabachnick and Fidell (2011) provide a formula for calculating sample size requirements by considering the number of independent variables. The formula is as follows:

Formula of sample size = N > 50 + 8m
(m = number of independent variables)

Based on the formula, 74 respondents were required for each independent variable. This indicated that the sample size of 88 respondents in this study was sufficient to meet the standard regression requirement.

8.2.1.2. Checking outliers

The outlier was checked using Mahalanobis distance tests using multiple regression programs. The maximum score from the test was 16.9635, as shown in Table 2. The critical value for evaluating the Mahalanobis distance values in this study was adopted from Tabachnick and Fidell (2011) and Pallant (2005). There were 3 independent variables in this study, thus the critical value was 11.35.

Table 2
Outlier Residual statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.0068	5.3277	3.3690	1.0413	84
Std. Predicted Value	-2.2686	1.8810	0.0000	1.0000	84
Standard Error of Predicted Value	0.0632	0.2629	0.1170	0.0393	84
Adjusted Predicted Value	1.0074	5.3474	3.3706	1.0401	84
Residual	-1.6831	1.6178	0.0000	0.5550	84
Std. Residual	-2.9772	2.8617	0.0000	0.9818	84
Stud. Residual	-3.0522	2.9444	-0.0012	1.0058	84
Deleted Residual	-1.7690	1.7126	-0.0015	0.5829	84
Stud. Deleted Residual	-3.2268	3.0987	0.0000	1.0278	84
Mahal. Distance	0.0493	16.9635	2.9643	2.9938	84
Cook's Distance	0.0000	0.1282	0.0128	0.0276	84
Centered Leverage Value	0.0006	0.2044	0.0357	0.0361	84

a. Dependent Variable: Customer Purchase Intention

8.2.1.3. Normal P-P plot of regression standardized residual

Figure 2 shows a normal plot of the regression standardized residual. This indicates that the data were appropriate to be used in the multiple regression analysis because the residuals showed a straight line (from bottom left to top right) relationship with the predicted dependent variable scores.

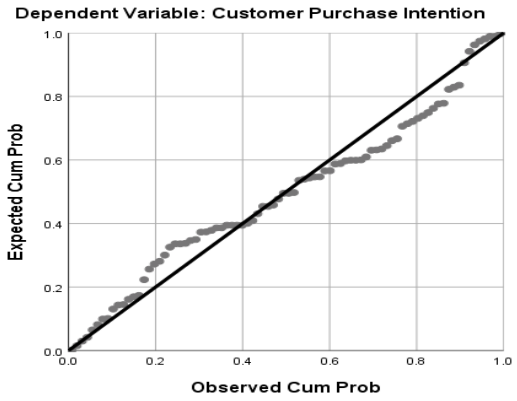

Fig. 2. Normal P-P plot of regression standardised residual

8.2.1.4. Histogram

Figure 3 confirms that the data were suitable to be used in the multiple regression analysis because the residuals were normally distributed about the predicted dependent scores.

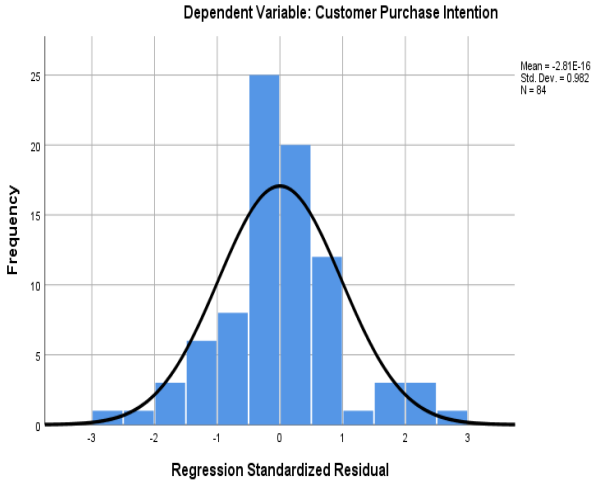

Fig. 2. Histogram

8.2.1.5. Collinearity diagnostics

Table 3 shows the results of tolerance and VIF. Generally, cut-off points for determining the presence of multicollinearity are a tolerance value of less than .10 and a VIF value of above 10. In this present study, the tolerance value for each independent variable was more than .10, and these results were supported by the VIF values, which were below 10. Therefore, the results indicated that there was no violation of the multicollinearity assumption.

Table 3
Coefficient

Model	Standardized Coefficients	t	Sig.	Collinearity Statistics	
	Beta			Tolerance	VIF
(Constant)		-0.293	0.000		
Technology	-0.066	-0.611	0.000	0.237	4.215
Service Marketing	1.003	8.627	0.000	0.205	4.888
People	-0.079	-0.771	0.000	0.264	3.789

8.2.2. Step 2: Evaluating the model

Results of the R square shown in Table 4 indicate how much of the variance in the dependent variable (decision outcome) is explained by the model (which includes the 3 independent variables). In this study, the value of the adjusted R square was .779. When expressed as a percentage multiplied by 100, this means that the model explained 77.9% of the variance in the frequency of customer purchase intention.

Table 3
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.882[a]	0.779	0.770	0.56531

a. Predictors: (Constant), Technology, Service Marketing, People
b. Dependent Variable: Customer Purchase Intention

Furthermore, to assess the statistical significance of the result (see Table 5.9) for testing that multiple R in the population was equal to 0, the model in this study reached statistical significance [$F(3,80) = 93.866$, $p < 0.000$].

Table 3
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.993	3	29.998	93.866	.000[b]
	Residual	25.566	80	0.320		
	Total	115.560	83			

a. Dependent Variable: Customer Purchase Intention
b. Predictors: (Constant), Technology, Service marketing, People

8.2.3. Step 3: Evaluating each of the independent variables

This section discusses which of the 3 independent variables included in the model contributed to the prediction of the dependent variable (customer purchase intention). Results (see Table 3) show that all the variables ($p < .05$) made a significant contribution to the prediction of the dependent variable (Customer intention). Furthermore, the beta coefficient value used standardized coefficient rather than unstandardized coefficient because, as emphasized by Pallant (2005), these values have been converted to the same scale so that the results can be compared to each of the different variables. Results (see Table 3) indicate that the independent variable namely Service Marketing was the largest beta coefficient (Beta = 1.003). This means that this independent variable made the strongest contribution to explain the dependent variable. In other words, Service

Marketing was the best factor that influenced customer purchase intention for the case of Bateriku.com.

9. Conclusions

This study provides a better understanding of the factor that influences the customer to use the Bateriku.com service concerning the battery on-site delivery.

The results of this study suggested that service marketing contributed statistically significantly to the intention of the customer, which then determine the actual purchase of battery through Bateriku.com service. The assumption that service marketing is difficult to maintain (Michael & Ferrell, 2010) has been challenged in this study where Bateriku.com has exploited the advance in technology to set a standard of service level of onsite battery delivery to the customer evident from the result discussed in the descriptive and inferential analysis. However, the adoption of technology in this business model requires an improvement due to the high expectation of customers which is currently not only concerned with physical interaction but the overall service marketing performance that includes the simplicity and user-friendly of the technology adoption. This finding indicates the service marketing which emphasis the physical experience between the seller and buyer is now can be further improved by exploiting the technology.

A deep understanding of the customer requirement will allow Bateriku.com to grow or expand its market reach. To do this, the company should continue to improve the process by increasing the automation process in the inquiry stage. The influence of technology in the current business environment regardless of the type of business model will ensure their business sustainability. This means Baterikum.com should exploit the availably of technology in their business model to increase customer interaction which is the critical aspect of service marketing. Improving and strengthening this aspect will give many benefits in terms of resources and efficiency.

In conclusion, the introduction of a new business model for the purchase of batteries by Bateriku.com is still in the infancy stage, and there are broad opportunities for further re-searches to understand the implementation of this business model. This study is an aperture for other researchers who are interested in delving into this topic further, whether in the Malaysian context or other contexts.

References

Abdulghader Abu Reemah et al (2012), Challenges of security, protection and trust on E-commerce: A case study of online purchasing in Libya, International Journal of Advanced Research in Computer and Communication Engineering, Vol. 1, Issue 3, May 2012.

Demangeot, C., & Broderick, A. J. (2010). Consumer perceptions of online shopping environments. Psychology & Marketing, 30(6), 461–469. doi:10.1002.

https://www.tandfonline.com/doi/full/10.1080/23311975.2018.1514940

Haque, A., Anwar, N., Yasmin, F., Sarwar, A., Ibrahim, Z., & Momen, A. (2015). Purchase intention of foreign products: A study on the Bangladeshi consumer perspective. SAGE Open, 5(2). doi:10.1177/2158244015592680

Hoque, M. R., Ali, M. A., & Mahfuz, M. A. (2015). An Empirical Investigation on the adoption of e-commerce in Bangladesh. Asia Pacific Journal of Information Systems,25(1). doi:10.14329/apjis.2015.25.1.001.

Gong, W., Stump, R. L., & Maddox, L. M. (2013). Factors influencing consumers' online shopping in China. Journal of Asia Business Studies, 7(3), 214–230. doi:10.1108/JABS-02-2013-0006

Liu, X., He, M., Gao, F., & Xie, P. (2008). An empirical study of online shopping customer satisfaction in China: A holistic perspective, International Journal of Retail & Distribution Management, 36(11), 919–940. Retrieved from. doi:10.1108/09590550810911683 82

Katawetawaraks, C., & Wang, C. L. (2011). Online shopper behavior: Influences of online shopping decision. Asian Journal of Business Research, 1(2). doi:10.14707/ajbr.112

Koufaris, M., Kambil, A., & LaBarbera, P. A. (2001). Consumer behavior in web-based commerce: An empirical study. International Journal of Electronic Commerce, 6(2), 115–138. doi:10.1080/10864415.2001.11044233

Kim, C., Zhao, W., & Yang, K. H. (2008). An empirical study on the integrated framework of e-CRM in online shopping. Journal of Electronic Commerce in Organizations, 6(3), 1–19. doi:10.4018/JECO

Koufaris, M. (2002). Applying model and technology flow theory behavior acceptance to the online consumer. Information Systems Research, 13(2), 205–223. doi:10.1287/isre.13.2.205.83

Laforet, S., & Li, X. (2005). Consumers' attitudes toward online and mobile banking in China. International Journal of Bank Marketing, 23(5), 362–380. doi:10.1108/02652320510629250

Liao, S. H., Chu, P. H., Chen, Y. J., & Chang, C. C. (2012). Mining customer knowledge for exploring online group buying behavior. Expert Systems with Applications, 39(3), 3708–3716. doi:10.1016/j.eswa.2011.09.066

Lee, G., & Lin, H. (2005). Customer perceptions of e- service quality in online shopping. International Journal of Retail & Distribution Management, 33(2), 161–176. doi:10.1108/09590550510581485

Mudambi, S. M., & Schuff, D. (2010). What makes a helpful online review? A study of customer reviews on Amazon. com. MIS Quarterly, 34(1), 185–200. doi:10.2307/20721420

Manuel Silverio-Fernández. (2018). What is a smart device? - a conceptualization within the paradigm of the internet of things, ISSN: 2213-7459 (Online)

Mohammad Anisur Rahman (2018), Consumer buying behavior towards online shopping: An empirical study on Dhaka city, Bangladesh, Journal Cogent Business & Management, Volume 5, 2018 - Issue 1

Pallant, J. 2002, SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows (Version 12), Allen & Unwin, NSW.

Pallant, J. 2005, SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS (2nd Edition), Allen & Unwin, NSW.

Sabbir Rahman, M. (2012). Dynamics of consumers' perception, demographic characteristics and consumers' behavior towards the selection of a restaurant: An exploratory study on Dhaka city consumers. Business Strategy Series, 13(2), 75–88. doi:10.1108/17515631211205488

Tabachnick, B. G., and Fidell, L. S. 2001, Using Multivariate Statistics (4th Edition), Harper Collins, New York.

Vegiayan, K. D., Ming, C. W., & Harun, M. L. O. (2013). Online shopping and customer satisfaction in Malaysia. International Journal of Marketing Practices, 1(1), 43–51.

Zuroni, M. J., & Goh, H. L. (2012). Factors influencing consumers' attitude towards e-commerce purchases through online shopping. International Journal of Humanities and Social Science, 2(4), 223–230.

This article can be cited: Md Sapry, H. R., Nordin, N., Ahmad, A. R., & Baskaran, S. (2022). Investigation of Customer Purchase Intention Towards Car Battery On-Site Delivery Services. *Journal of Optimization in Industrial Engineering*, *15*(2), 249-255.
Doi: 10.22094/joie.2022.1962052.1970