



Modeling the Role of C2C Information Quality on Purchase Decision in Facebook

Rafita Haque, Imran Mahmud, Md. Hasan Sharif, S. Rayhan Kabir, Arpita Chowdhury, Farzana Akter, Amatul Bushra Akhi

► To cite this version:

Rafita Haque, Imran Mahmud, Md. Hasan Sharif, S. Rayhan Kabir, Arpita Chowdhury, et al.. Modeling the Role of C2C Information Quality on Purchase Decision in Facebook. 17th Conference on e-Business, e-Services and e-Society (I3E), Oct 2018, Kuwait City, Kuwait. pp.244-254, 10.1007/978-3-030-02131-3_22 . hal-02274192

HAL Id: hal-02274192

<https://inria.hal.science/hal-02274192>

Submitted on 29 Aug 2019

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

The Role of C2C Information Quality of Bangladeshi Users in Facebook Commerce

Rafita Haque^{1, 2}, Imran Mahmud², Md. Hasan Sharif², S. Rayhan Kabir², Arpita Chowdhury¹, Farzana Akter³ and Amatul Bushra Akhi³

¹ Department of Computer Science and Engineering, Asian University of Bangladesh, Dhaka, Bangladesh

rafitahaque93@gmail.com, arpitachy10@yahoo.com

² Department of Software Engineering, Daffodil International University, Dhaka, Bangladesh

rafita.swe@diu.edu.bd, imranmahmud@daffodilvarsity.edu.bd, sharif.swe@diu.edu.bd, rayhan561@diu.edu.bd

³ Department of Computer Science and Engineering, Daffodil International University, Dhaka, Bangladesh

farzana.cse@diu.edu.bd, akhi.cse@diu.edu.bd

Abstract. A market which provides an innovative way to allow customers to interact with each other called Customer-to-customer (C2C) market. In C2C communications, online communities play an important role in decision making to buy a product. This investigation develops a research model for online communities of Facebook commerce (F-Commerce) in Bangladesh region, which is based on Information Adoption Model (IAM). This study exhibits a model to influences of C2C communication on Bangladeshi consumers' purchase decision in the online communities of F-Commerce. The proposed model used the Partial Least Squares (PLS) technique to test 120 effective survey data. This survey data has been taken from the Bangladesh Facebook users and strongly involved in product buy-sell at F-Commerce. The analyzed results show that Argument Quality (AQ), Source Credibility (SC) and Tie Strength (TS) positively influence Purchase Decision (PD) through Product Usefulness Evaluation (PUE). In addition, Tie Strength exhibits difference effect on Product Usefulness Evaluation between the contexts of consumers communicating with virtual consumers relationships. Theoretical and executive implications are discussed for constructing our proposed model.

Keywords: Social Media, Facebook commerce, Consumer to Consumer (C2C).

1 Introduction

At present people are getting easier to communicate with each other by the computer mediated communication (CMC) technologies called social media [1]. Due to the growing amount web traffic, the social network sites (SNS) such as Facebook, Friendster, CyWorld and MySpace are the crucial web applications to access the various visitors in rapid time now a day. Under the statistics collected by Alexa,

which is a web traffic data analytics company, Facebook obtained the third rank of the most viewed websites in 2018 after Google and YouTube [2]. With the benefit of friend recommendations, widespread sharing and dynamic responses, Facebook become one of the most powerful tool for today's' social networking based e-commerce. Facebook commerce (F-commerce) prescribes to the purchase and selling of products through Facebook [3]. Furthermore, Facebook announced unique features within the site. To illustrate, famous "like" button, rapid "share", easy "tag", dynamic "comment" and "friend" relationships. These features could positively affect the customers' purchase intension by obtaining more confident after friends recommendation. Social Networking Services (SNSs) consent the people and online sellers to engage in consumer-to-consumer social commerce (C2C s-commerce) [4] [6]. Nowadays, Facebook users are cumulatively using the Facebook website to conduct the trade operations, by posting advertisements and buying or selling products from each other. This type of conception is called as a Facebook C2C social commerce [7].

In Bangladesh the popularities of F-commerce are increasing, almost two thousands of Facebook pages are available [8–10]. These survey flourished manuscript has developed based on 5 attributes (See Table 1). There are Argument Quality (AQ) [11], Tie Strength (TS) [12], Source Credibility (SC) [13], Product Usefulness Evaluation (PUE) [14] and Purchase Decision (PD) [15]. We have utilized these attributes because these attributes are very helpful and mostly used for finding the information quality in e-commerce. The literature review section has been demonstrated the importance about these five attributes. Our exploration develops a research model to investigate the influence of Facebook C2C communication on consumers' purchase decision. It also compares the differences of real and virtual relationship environments to better understand consumers' purchase decision in F-Commerce. This model has revealed which is based on the Information Adoption Model (IAM). IAM is a relatively new, effective and practical approach [16, 17]. Our findings can provide the better understanding of the role of C2C communication in Facebook communities for consumer behavior research in Bangladeshi domain.

Table 1. Five utilized attributes and their abbreviations.

Attributes	Abbreviation
Argument Quality	AQ
Tie Strength	TS
Source Credibility	SC
Product Usefulness Evaluation	PUE
Purchase Decision	PD

2 Literature Review

A recent study proposed a model which based on the Information Adoption Model (IAM) [18]. The results of this research have shown that AQ, SC, and TS positively

influence the purchase decision, where used Partial Least Squares (PLS) technique [19, 20]. We applied this research model in Bangladeshi domain and shown more specific consumers behavior analysis in F-commerce.

Another study analyzed 297 effective data for understanding the influences of system quality, information quality, and service quality for a website to satisfy their consumers [21]. The results of the conception to evaluate the trustworthiness of online sellers showed that, people are the key factors that make consumers trust towards online sellers [22]. The social media survey of consumer has shown that trust is more usefulness to make the intention of consumers to purchase through social networking sites [23]. An investigation managed to the effects of F-commerce browsing and usage intensity in predicting urge to purchase and impulse purchase behavior among the consumers [24]. An approach used 180 data that directly investigate and evaluate the success of e-commerce for any small and medium-sized companies [25]. E-commerce service based another research have measured the requirements feasibility for B2C environment [26].

A social learning theory has developed to examine customers' learning behaviors [27]. A decision support model which has exhibited to manage the buyer risk and improves the quality of supplier development [28]. A theory evaluates using 307 effective data and reveals that cognitive and relational capital positively affects buyers' loyalty [29]. One team researchers established a casual model to investigate review quality effect on product and purchase intention [30]. In this study, using 349 experimental data that proved demographically similar reviewers enhanced the effect of review quality.

In the above literature review, we observe that most of the research work focused on information quality which makes an intention for the consumer to purchase a product. We have divided the C2C information quality [31] of F-commerce into AQ, TS, SC, PUE and PD sections.

3 Research Model and Hypothesis Development

The intention of a consumer to purchase a product depends on information quality shown by the information adoption model [32], [33]. C2C communication refers to the transfer of the variety of information from one customer to another customer in a way that has the potential to change their preferences, actual purchase behavior, or the way they further interact with others [34]. In line with the information adoption model, the present study proposes that PUE (Product Usefulness Evaluation) has a positive influence on the PD (Purchase Decision) of consumers. The hypothesis 1 is shown as follows:

H1: A positive connection between PUE and PD in F-commerce for Bangladesh domain.

According to the dual action models user decision making depends on persuasive information [35]. In accordance with information adoption model, the AQ (Argument

Quality) data [36] is a momentous middle sign which exerts an essential influence on information. The Bangladeshi consumers are always eager to know about the product which is suitable for their personal usage [37]. So that, in the online marketing, the information quality and consultation of related products is highly appreciated. In the context of AQ information is very meaningful because this makes a clear consciousness about the selected product. The hypothesis 2 is shown as follows:

H2: AQ is positively related to PUE in Bangladesh region.

Another models user decision making depends on persuasive information [38]. The most common feature of C2C communication is the consumers easily get the advice from other consumers. Based on this shared knowledge the consumer can easily make a judgment which helps those to make the future prediction about consumer's behaviors [39]. The judgment provides a cue that SC (Source Credibility) is very important to judge product usefulness evaluation (PUE). According to information adoption model, the SC of informational data is a potential peripheral cue which exerts a significant impact on information usefulness. The hypothesis 3 is shown as follows:

H3: SC is positively related to PUE.

Hence, in line with the information adoption model, the present study proposes that SC has a positive impact on the PUE. Members can communicate with others without time and space limitation in online communities [40]. Product messages come from stronger ties may more effective for consumers with a shopping demand to judge the usefulness of a product involved in C2C communications. The TS (Tie Strength) exerts an impact on the effectiveness of word-of-mouth communications in the online context [41]. The individual-level tie strength is an important antecedent of PD in online peer communications [42]. The present study proposes that TS has a positive impact on the PUE at Facebook communications in Bangladesh. The hypothesis 4 is shown as follows:

H4: TS is positively related to PUE.

In the online community contexts, consumers can choose to mainly communicate with real or virtual relationships by participating in different communities [43]. A study pointed out social ties play a different role in consumer decision making in different communication contexts [44]. The strong ties information are more influential in consumer decision making than that from weak ties in the context of offline word of mouth (WOM) communications or C2C interaction [45]. Real interpersonal relationships among members are likely to be stronger and more stable than those virtual relationships among members in online communities. Similarly, the present study proposed that the influence of TS on the PUE is stronger when consumers mainly communicate with virtual consumer relationships at Facebook communities. The hypothesis is shown as follows:

H5: TS has a stronger influence on PUE when consumers mainly communicate with real relationships than with virtual relationships in Facebook communities.

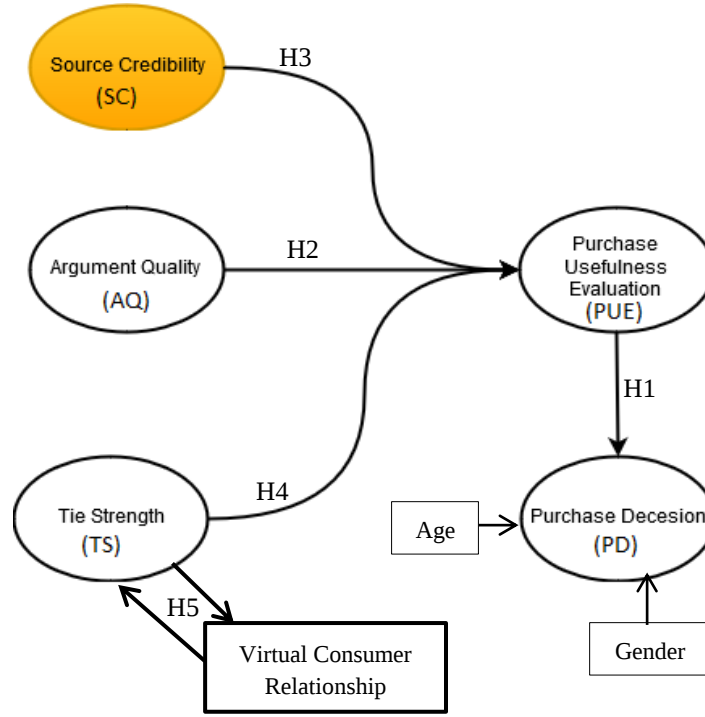


Fig. 1. Our research model.

4 Methods

4.1 Data Collection and Measurement

A survey was utilized to examine the impact of C2C communication on customer purchase choice. In this research, we did 120 surveys among the Bangladeshi Facebook users who are university students [46]. These survey data has been taken from the Bangladesh Facebook users and strongly involved in product buy-sell at F-Commerce. The analysis of surveys is based on PLS (Partial least squares), where we have used SmartPLS 3.0 software [47]. The questionnaire survey consists of five attributes, which are AQ, TS, SC, PUE and PD (See Table 1.). These attributes are focused on purchase decision making to measure the constructs of our research model. Likert scale approach [48] have used for ranging from “1 = strongly disagree” to “7 = strongly agree”, that presented with the set of attributes to measure the theoretical concepts. Following the recommended two-stage analytical procedures [49], we tested the measurement model (validity and reliability of the measures)

followed by an examination of the structural model (testing the hypothesized relationship). To test the significance of the path coefficients (p) and the loadings a bootstrapping method was used [50].

4.2 Sample Profile

The demographic information of the respondents tabulated in Table 2, where derived from descriptive analysis [51]. The majority of the age group (43.3 %) was in the category of 22-25 years old. Most of the respondents were Male which is 76.7% and the frequency of the females is 23.3 %. Most of the people are directly or indirectly connected to the internet as well as Facebook. In Table 1, we have analyzed our survey based on gender. Moreover, we separate the males and females and found that the male percentage is 23.3% and the female percentage is 76.7%.

Table 2. Demographic information of different genders.

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	28	23.3	23.3	23.3
Male	92	76.7	76.7	100.0
Total	120	100.0	100.0	123.3

Table 3. Demographic information of several ages.

Age	Frequency	Percent	Valid Percent	Cumulative Percent
18-21	44	36.7	37.0	37.0
22-25	52	43.3	43.7	80.7
26-30	16	13.3	13.4	94.1
30+	7	5.8	5.9	100.0
Total	119	99.2	100.0	
Missing System	1	0.8		
Total	120	100.0		

5 Result and Data Analysis

5.1 Model Measurement

To assess the measurement model, two types of validity will be examined, first the convergent validity and then the discriminant validity [52]. The convergent validity of the measurement is usually ascertained by examining the loadings, average variance extracted and also the composite reliability [53]. The composite reliabilities were all higher than 0.7 and the AVE (Average Variance Extracted) was also higher than 0.5

as suggested in the literature (see Table 4). The discriminant validity of the measures (the degree to which items differentiate among constructs or measure distinct concepts) was examined by following criterion of comparing the correlations between constructs and the square root of the average variance extracted for that construct (see Table 5). All the values on the diagonals were greater than the corresponding row and column values indicating the measures were discriminant.

Table 4. Convergent validity

Attributes	Composite Reliability	Average Variance Extracted (AVE)
AQ	0.737	0.584
PD	0.801	0.674
PUE	0.826	0.543
SC	0.857	0.749
TS	0.762	0.517

Table 5. Discriminant validity

Attributes	AQ	PD	PU	SC	TS
AQ	0.764				
PD	0.299	0.821			
PUE	0.294	0.436	0.737		
SC	0.299	0.193	0.528	0.866	
TS	0.326	0.324	0.518	0.503	0.719

5.2 Structural Model

To assess the structural model (Structural equation modeling) [54] suggested looking at the path coefficients (p), effect sizes (f^2), beta (β) and the corresponding t-statistic [55] via a bootstrapping procedure with a resample of various data or information. They also suggested that in addition to these basic measures researchers should also report the effect sizes (f^2) [56].

The outcomes of structural model test display that the path coefficients (p) are statistically significant ($p < 0.01$), barring for the coefficients of control attributes to PD. The f^2 of PD is 0.215, and the f^2 of PUE is 0.235.

Our investigation shows that PUE ($\beta = 0.201$, $p < 0.01$) is a potential predictor of PD. As we hypothesized that PUE would positively effect on PD, hypothesis H1 is susceptible. The AQ ($\beta = -0.152$, $p < 0.01$), SC ($\beta = 0.319$, $p < 0.01$), and TS ($\beta = 0.307$, $p < 0.01$) are predictors of PUE. As we hypothesized that AQ, SC, and TS would positively affect PUE, hypotheses H2, H3, and H4 are adopted.

Table 6. Structural model result

Hypothesis	Attributes	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics (O/STDEV)	P Values	Status
H1	AQ > PUE	0.087	0.100	0.077	1.141	0.254	Not supported
H2	PUE > PD	0.436	0.446	0.080	5.440	0.000	Supported
H3	SC > PUE	0.342	0.348	0.093	3.661	0.000	Supported
H4	TS > PUE	0.318	0.327	0.086	3.698	0.000	Supported

Table 7. Effect size of calculation result

Attributes	Effect size	Status
AQ	0.011	No
PUE	0.235	Large
SC	0.135	Small
TS	0.115	Small
PD	0.215	Large

6 Discussion

The research goal of this study was to investigate the role of information quality in increasing purchase intention in F-commerce for Bangladesh aspects. The significant impact of perceived reciprocal benefit on knowledge share indicates consumer will share knowledge based on their expectation of future benefit. If the consumer feels that sharing their knowledge in Facebook will be acknowledged by the consumers who sell their product, then the consumers might have a good impression on that their expected consumers. Hence PUE has a positive effect on the PD of consumers. Our second hypothesis H2 implies that if consumers enjoy being on the social network or if they enjoy helping other consumers then they are motivated to post knowledge related data on Facebook.

This result indicated that perceived status among friends and instructor is not an important factor to students compared to other factors. This suggests that consumers believe that sharing knowledge will lead to desirable outcomes and favorable consequences. We identified the objectives that increase the PD of F-commerce. AQ, TS, SC, PUE has a positive impact on consumers' actions.

7 Conclusion and Future Work

With the integrated model of our own concept for the role of information quality in F-commerce for Bangladesh region, we proposed a theory for making a prediction on F-commerce purchase decision-making approach. First, we tested the relationship between product usefulness evaluation and purchase decision making. After that, we

tested the relationships of AQ, SC, TS, FC PUE and PD with the dependent variable product usefulness evaluation. Overall, these five arguments are found strong predictors of consumer purchase decision making. Although the findings provide meaningful implications, future studies should address several limitations. First, AQ, SC, and TS may not fully reflect the overall central and peripheral cues. Further study could add other cues. Second, the present study found that age and gender are not significant control variables of the purchase decision. The future study will be conducted on more features for better understanding.

Acknowledgments

The research investigation was organized by the assist of the Software Engineering department, Daffodil International University. This examination has been guided based on thesis dissertation [57] under the supervision of Dr. Imran Mahmud. We have developed our proposed models at Cyber Security Center (CSC) laboratory [58]. Cyber Security Center (CSC) is a one of the potential research labs of Daffodil International University.

References

1. Obar, J. A., Wildman, S.: Social Media Definition and the Governance Challenge: An Introduction to the Special Issue. *Telecommunications Policy* 39(9), 745–750 (2015).
2. Alexa Internet Inc., facebook.com Traffic Statistics, <https://www.alexa.com/siteinfo/facebook.com>, last accessed 2018/5/10.
3. Leong, L. Y., Jaafar, N. I., Ainin, S.: Understanding facebook commerce (f-commerce) actual purchase from an artificial neural network perspective. *Journal of Electronic Commerce Research* 19(1), 75–103 (2018).
4. Molinillo, S., Cabanillas, F. L., Sánchez, R. A.: A Social Commerce Intention Model for Traditional E-Commerce Sites. *Journal of Theoretical and Applied Electronic Commerce Research* 13(2), 80–93 (2018).
5. Sukrat, S., Mahatanankoon, P., Papasratorn, B.: The Driving Forces of C2C Social Commerce in Thailand: A Developing Framework. In: 9th International Conference on Advances in Information Technology. pp. 108–118. *KnE Social Sciences*, Bangkok (2017).
6. Wu, Y. L., Li, E. Y: Marketing mix, customer value, and customer loyalty in social commerce. *Internet Research* 28(1), 74–104 (2018).
7. Chen, J. V., Su, B., Widjaja, A. E.: Facebook C2C social commerce: A study of online impulse buying. *Decision Support Systems* 83, 57–69 (2016).
8. Mahmud, F.: Daily Bangladesh Post, f-commerce on rise in Bangladesh. <http://www.thebangladeshpost.com/supplement/13991/pdf>, last accessed 2018/1/5 (2017).
9. Zabeen, M., Ara, H., Sarwar, N.: F-Commerce in Bangladesh: “Venit, Vidit, Vicit”. *IOSR Journal Of Humanities And Social Science* 17(5), 1–08 (2013).
10. Ahmed, Z.: Effectiveness of Facebook marketing in startup business A Perspective on Harriken.com Limited. Internship report (BUS 400), BRAC University (2013).

11. Xu, X., Yao Z.: Understanding the role of argument quality in the adoption of online reviews: An empirical study integrating value-based decision and needs theory. *Online Information Review* 39(7), 885–902 (2015).
12. McGuire, G. M., Bielby, W. T.: The Variable Effects of Tie Strength and Social Resources. *Work and Occupations* 43(1), 38–74 (2016).
13. Todd, P. R., Melancon, J.: Gender and live-streaming: source credibility and motivation. *Journal of Research in Interactive Marketing* 12(1), 79–9 (2018).
14. Hügi J., Schneider R.: Building an Online Environment for Usefulness Evaluation. In: Aalberg T., Papatheodorou C., Dobрева M., Tsakonas G., Farrugia C.J. (eds) *Research and Advanced Technology for Digital Libraries. TPD L 2013. Lecture Notes in Computer Science*, vol 8092. Springer, Berlin, Heidelberg (2013).
15. Hanaysha, J. R.: An examination of the factors affecting consumer's purchase decision in the Malaysian retail market. *PSU Research Review* 2(1), 7–29 (2018).
16. Wang, Y.: Information Adoption Model, a Review of the Literature. *Journal of Economics, Business and Management* 4(1), 618–622 (2016).
17. Taherdoost, H.: A review of technology acceptance and adoption models and theories. *Journal of Economics, Business and Management* 22, 960–967 (2018).
18. Zhu, D. H., Chang, Y. P., Luo, J. J.: Understanding the influence of C2C communication on purchase decision in online communities from a perspective of information adoption model. *Telematics and Informatics* 33(1), 8–16 (2016).
19. Avkiran N.K.: Rise of the Partial Least Squares Structural Equation Modeling: An Application in Banking. In: Avkiran N., Ringle C. (eds) *Partial Least Squares Structural Equation Modeling. International Series in Operations Research & Management Science*, vol 267. Springer, Cham (2018).
20. Sarstedt, M., Mitchell, R., Gudergan, S. P.: Partial least squares structural equation modeling in HRM research. *The International Journal of Human Resource Management* (2018).
21. Lin, H. F.: The Impact of Website Quality Dimensions on Customer Satisfaction in the B2C E-commerce Context. *Total Quality Management & Business Excellence* 18(4), 363–378 (2007).
22. Ramli, R., Bakar, A. A., Ismail, R., Aziz, N.: The trust effect towards online seller in social commerce. In: 6th International Conference on Computing and Informatics (ICOCI), Paper No. 030, pp. 317–322. Kuala Lumpur (2017).
23. Hajli, M. N.: A study of the impact of social media on consumers. *International Journal of Market Research* 56(3), 387–404 (2014).
24. Leong, L. Y., Jaafar, N. I., Ainin, S.: The effects of Facebook browsing and usage intensity on impulse purchase in f-commerce. *Computers in Human Behavior* 78, 160–173 (2018).
25. Choshin, M., Ghaffari, A.: An investigation of the impact of effective factors on the success of e-commerce in small-and medium-sized companies. *Computers in Human Behavior* 66, 67–74 (2017).
26. Zuo, W., Huang, Q., Fan, C., Zhang, Z.: Quality management of B2C ecommerce service based on human factors engineering. *Electronic commerce research and applications* 12(5), 309–320 (2013).
27. Chen, A., Lu, Y., Wang, B.: Customers' purchase decision-making process in social commerce: A social learning perspective. *International Journal of Information Management* 37(6), 627–638 (2017).
28. Quigley, J., Walls, L., Demirel, G., MacCarthy, B., Parsa, M.: Supplier quality improvement: the value of information under uncertainty. *European Journal of Operational Research* 264(3), 932–947 (2017).

29. Chen, X., Huang, Q., Davison, R. M.: The role of website quality and social capital in building buyers' loyalty. *International Journal of Information Management* 37(1), 1563–1574 (2017).
30. Shin, S. Y., Van Der Heide, B., Beyea, D., Dai, Y. N., Prchal, B.: Investigating moderating roles of goals, reviewer similarity, and self-disclosure on the effect of argument quality of online consumer reviews on attitude formation. *Computers in Human Behavior* 76, 218–226 (2017).
31. Ge, M., Helfert, M.: A Review of Information Quality Research - Develop a Research Agenda. In: 12th International Conference on Information Quality, pp. 76–91. MIT, Cambridge, MA, USA (2007).
32. Sussman, S. W., Siegal, W. S.: Informational influence in organizations: An integrated approach to knowledge adoption. *Information systems research* 14(1), 47–65 (2003).
33. Tang, J., Sun, Y., Yang, S., Sun, Y.: Revisit the information adoption model by exploring the moderating role of tie strength: a perspective from construal level theory. In: Pacific Asia Conference on Information Systems (PACIS), paper no. 352. Semantic Scholar, Taiwan (2016).
34. Libai, B., Bolton, R., Bügel, M. S., De Ruyter, K., Götz, O., Risselada, H., Stephen, A. T.: Customer-to-customer interactions: broadening the scope of word of mouth research. *Journal of service research* 13(3), 267–282 (2010).
35. Yoon, C., Laurent, G., Fung, H. H., Gonzalez, R., Gutchess, A. H., Hedden, T., Pandraud, R. L., Mather, M., Park, D. C., Peters, E., Skurnik, I.: Cognition, Persuasion and Decision Making in Older Consumers. *Telematics and Informatics* 16(3–4), 429–441 (2005).
36. Xu, X., Yao Z.: Understanding the role of argument quality in the adoption of online reviews. *Online Information Review* 39(7), 885–902 (2015).
37. Lautiainen, T.: Factors affecting consumers' buying decision in the selection of a coffee brand. Bachelor's Thesis, Faculty of Business Administration, Saimaa University of Applied Sciences (2015).
38. Petty, R. E., Cacioppo, J. T.: The elaboration likelihood model of persuasion. *Advances in experimental social psychology* 19, 123–205 (1986)
39. Afolabi, I. T., Oladipupo, O. O., Worlu, R. E.K., Akinyemi, I. O.: A Systematic Review of Consumer Behaviour Prediction Studies. *Covenant Journal of Business & Social Sciences* 7(1), 41–60 (2016).
40. Dholakia, U. M., Bagozzi, R. P., Pearo, L. K.: A social influence model of consumer participation in network-and small-group-based virtual communities. *International journal of research in marketing* 21(3), 241–263 (2004).
41. Andreassen, T.W., Streukens, S.: Service innovation and electronic word-of-mouth: Is it worth listening to? *Manag. Serv. Qual.* 19 (3), 249–265 (2009).
42. Wang Y.: Information Adoption Model, a Review of the Literature. *Journal of Economics, Business and Management* 4(11), 618–622 (2016).
43. Zou Y.: Social Media Review: The Impact of Social on Brand-Consumer Relationships. In: Kubacki K. (eds) *Ideas in Marketing: Finding the New and Polishing the Old. Developments in Marketing Science: Proceedings of the Academy of Marketing Science.* pp 624-624. Springer, Cham (2015).
44. Brown, J.J., Reingen, P.H.: Social ties and word-of-mouth referral behavior. *Journal of Consumer Research* 14 (3), 350–362 (1987).
45. Kundu, S., Rajan, S. C.R.: Word of Mouth: A Literature Review. *International Journal of Economics and Management Sciences* 6(6), 1–9 (2017).

46. Doloto U., Chen-Burger YH.: A Survey of Business Models in eCommerce. In: Jezic G., Howlett R., Jain L. (eds) *Agent and Multi-Agent Systems: Technologies and Applications. Smart Innovation, Systems and Technologies*, vol 38, pp. 249–259. Springer, Cham (2015)
47. Hair, J. F., Sarstedt, M., Ringle, C. M., Gudergan, S. P.: *Advanced Issues in Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, CA: Sage (2018).
48. Ivanova, O. A., Ivanovab, V. V., Saltanb, A. A.: Likert-scale questionnaires as an educational tool in teaching discrete mathematics. *Journal International Journal of Mathematical Education in Science and Technology* (2018).
49. Anderson, J. C., Gerbing, D. W.: Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin* 103 (3), 411–423 (1988).
50. Wood, M.: Bootstrapping confidence levels for hypotheses about regression models. University of Portsmouth Business School, Portland Street, Portsmouth (2012).
51. Person, K.: A Descriptive Analysis of Demographic Characteristics and Their Influence on Student Attendance at Programming Board Events. *Educational Administration: Theses, Dissertations, and Student Research*. 69, (2011).
52. Cheung, G. W., Wang, C.: Current Approaches for Assessing Convergent and Discriminant Validity with SEM: Issues and Solutions. *Academy of Management Proceedings* 2017(1), (2017).
53. Bacon, D. R., Sauer, P. L., Young M.: Composite Reliability in Structural Equations Modeling. *Educational and Psychological Measurement* 55(3), 394–406 (1995).
54. Sharma, P., Sharma, P., Nage, P., Bafna, D., Salvi, V.: Analyzing Effect of Structural Equation Modeling (SEM) Approach in E-Commerce. *IOSR Journal of Engineering (IOSRJEN)* 7, 05-08 (2018)
55. Lakens, D.: Equivalence Tests: A Practical Primer for t Tests, Correlations, and Meta-Analyses. *Social Psychological and Personality Science* 8(4), 355–362 (2017).
56. Selya, A. S., Rose, J. S., Dierker, L. C., Hedeker, D., Mermelstein, R. J.: A practical guide to calculating Cohen's f^2 , a measure of local effect size, from PROC MIXED. *Frontiers in Psychology* 3, Article 111 (2012).
57. Haque, R.: The Role of Information Quality in F-Commerce. Bachelor's Thesis, Department of Software Engineering, Daffodil International University (2017).
58. Cyber Security Center (CSC), Daffodil International University, <http://cscdiu.daffodilvarsity.edu.bd/>, last accessed 2018/6/10.