

Experimental Study on the Effectiveness of Using warung-kampung.com E-Commerce Application

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ABSTRACT

The ICT developments and physical distancing policies due to the Covid-19 pandemic have caused a shift in the way consumers buy online. Changes in consumer behavior will certainly make it difficult for small traders, especially those who are not familiar with the use of e-commerce technology. This study aims to analyze the effectiveness of using the e-commerce application warung-kampung.com as a platform for local-based online trading, covering the area closest to the seller and buyer. This study uses a qualitative experimental approach and analysis. This application was tested for validity by a communication expert and marketing expert. The instruments used were interviews, observation, and questionnaires. The participants were small traders who have never used any online sales application, and the consumers who tried warung-kampung.com. The application effectiveness was analyzed from the aspect of ease of use, security, and possibilities for widespread use. The results showed that warung-kampung.com provides convenience, especially those not accustomed to online sales applications. Respondents were greatly helped by warung-kampung.com because of its ease of use. The registration process and product entry received a good response, and the security aspect was considered good. While the possibility of widespread use received moderate response.

Keywords: *effectiveness, e-commerce applications, online trading, cash on delivery*

1. INTRODUCTION

So far, the role of SMEs is considered to be able to drive a country's economy. Since the Coronavirus pandemic, all business sectors were disrupted. The impact of the Covid-19 pandemic is felt by business actors, both large and small due to the social distancing policy. However, small and medium enterprises (SMEs) are more affected by these restrictions than large and global companies [1]. In fact, SMEs are indeed the most vulnerable because they tend to have fewer assets, less capital reserves, and lower levels of productivity when compared to large companies [2]. This type of business is highly dependent on the circulation of money from the sale of merchandise, so that the decreasing demand will certainly disrupt the company's cash flow [3]. SME businesses are daily in nature and rely heavily on direct interaction, so these social distancing and lockdown policies prevent consumers from visiting stores. As a result, of course, demand and sales have dropped dramatically [4].

The Coronavirus pandemic and social distancing mandate have caused significant disruptions to consumer behavior because basically, all consumer

and consumption behavior is very bound to location and time [5]. Meaning that, all consumption is tied to time and place. With flexible timing but rigidity of location, consumers have adapted and improvised in a variety of innovative and creative ways. For example, the boundaries between work and life are now closed because people work at home, relax at home, and study at home. Because consumers cannot go to the store, the store must go to the customer. As consumers return to old habits, they are more likely to be changed by new rules and procedures in how consumers shop for and buy products and services. Entrepreneurs who depend on physical space will certainly lose money, such as cinemas, supermarkets, gyms, traditional food markets, car dealerships, restaurants, etc. Because consumers are also stuck at home for long periods of time, they tend to adopt new technologies that make work, study, and consumption easier in a more convenient way. Adopting digital technology tends to change existing habits [5].

To deal with the devastating effects of extraordinary events such as the COVID-19 outbreak, SMEs use, among other things, Digital technology (DT). This includes, for example, e-commerce, mobile

and collaborative technology, social media, etc. In dealing with situations like this, the use of technology is certainly the best solution to maintain the sustainability of SMEs. Some SMEs who still don't know about digital skills that are relevant to business, with this condition, eventually force them to study online business [3]. The digital approach will work well if SMEs are willing to transform digitally so that they are able to compete intensively. The strategy is to change physical or offline stores into stores that serve online purchases, for the safety and convenience of consumers and sellers. During this pandemic, SMEs can increase online promotion for both sales and logistics purposes. There is evidence in the previous research literature that implementing the right online strategy can increase productivity, competitiveness, and business performance [6]–[9].

Seeing that SMEs are part of the digital economic ecosystem, transformation and innovation in digital skills is necessary so that businesses can continue to survive today and in the future [3]. However, changes are hard for micro enterprises, run by illiterate people from lower income families, who aren't familiar with e-commerce and internet gadgets. Especially if most of their regular customers are just the same. Thus, this study aims to analyze the effectiveness of using the e-commerce application *warung-kampung.com* as a platform for local-based online trading, covering the area closest to the seller and buyer. Considering that the early users of this e-commerce application was small traders who never used any online sales application.

1.1 Warung-kampung.com E-Commerce Application

Electronic commerce or e-commerce is related to buying and selling transactions made digitally using a computer connected to the Internet network. E-commerce is a concept that can be explained as the process of buying and selling goods or services or the exchange of products and information through information networks, including the Internet [10]. E-commerce systems can be built on web-based applications or operating systems such as android, iOS, etc. According to Varmaat [8]. Anyone who has access to a computer, has a connection to the internet, and has a way to pay for goods or services they purchase, can participate in e-commerce.

Apart from the various types of definitions offered, there are similarities in each definition, where e-commerce has the following characteristics: a. The occurrence of a transaction between two parties; b. There is an exchange of goods, services or information; c. The internet is the main medium in this trading process or mechanism. The classification of e-commerce is usually based on the nature of the transaction. According to Suyanto [11] the following types of e-commerce are immediately distinguishable: 1. Business to Business (B2B); 2. Business to Consumer (B2C); 3. Consumer to Consumer (C2C); 4. Consumer to Business (C2B); 5. Non Business e-commerce; 6. Intra business (Organizational) e-

commerce.

The use of IT, especially the e-commerce system, is considered as one of the best solutions that can be used to boost the improvement and development of SMEs. One essential benefit in using e-commerce is SMEs able to get feedback from customers quickly, besides cutting costs for marketing [12]. Abandoning the utilization of the e-commerce system, it is believed to make SMEs continue to weaken. Through e-commerce the company can expand the market, bring in new customers, can provide unlimited service to its customers, access to information quickly, and can approach a good relationship with customers [13]. Fatmariansi, in her research shows that the higher the adoption of e-commerce system information technology in SMEs, the higher the performance of these SMEs [14]. Another research conducted by Sevitan shows the simultaneous influence of e-commerce on sales volume of 90.9% and the rest is influenced by other factors [15]. Another study conducted by Maryama stated that the biggest benefit of using e-commerce is increasing sales turnover by 31% [16]. Purbo and Wahyudi stated that companies that use e-commerce will benefit, namely (1) opening up more promising revenue streams that can't be found in traditional transaction systems, (2) increase market exposure, (3) reduce operational costs, (4) widen the reach (global reach), (5) increase customer loyalty, (6) improve supplier management, (7) shorten production time and (8) increase value chain [17]. The use of information technology, especially e-commerce systems, can have an impact on SMEs in terms of marketing and operations.

2. METHODS

This study employs a qualitative experimental approach and analysis. This *warung-kampung.com* e-commerce application has been previously tested for validity by a communication expert and marketing expert. The participants of this study were 10 local small traders who have never used any online sales application as the seller users, and 10 users with various demographic as the buyers. The instruments used were interviews, observation, and questionnaires.

To analyze the effectiveness of using e-commerce for local based online trading, usability testing was conducted through an experimental study. Usability testing is a usability evaluation approach that is carried out by collecting data from the results of making observations on product user respondents who carry out a certain task using the product [18]. Usability comes from the word usable which means it can be used well. The better the usability value, the more effective and easy to use the website will be [19]. Usability can be an important quality factor for interactive software systems, Web sites, and a variety of interactive mobile services [20]. Furthermore, another opinion states that usability is defined as objective performance and subjective image or impression, which are considered equally important in designing and evaluating e-commerce products

[21]. Usability evaluation is a very important part of the user interface design process [22]. The aspect that is measured in usability testing or scenario testing is the aspect of ease of use by observing the success of the user in completing the assigned task effectively and efficiently.

This research followed related usability testing with experimental studies to simulate a realistic e-commerce scenario for both seller and buyer, and used tasks that involved creating an account, entering products, and completing transactions for the sellers; and browsing the e-commerce website, selecting, and buying a product [23-24]. The experiment was conducted entirely online. To start the experiment, the participants were asked to open the e-commerce website. Before that, the participants were directed to a landing page, on which the task of the experiment was explained. Then, participant filled demographic inquiries.

Afterwards, the system will automatically assigned the participants to the interface according to their role as the buyer or the seller. To avoid empty product displays, we conduct the experiment with the seller first, then proceed with both seller and buyer accessing the application simultaneously. Provided with an identical amount of virtual money, the buyers were tasked to select and buy groceries of their choice, and the sellers were asked to finish the transactions until the staged product deliveries to the buyers.

Upon the completion of the experiments, the users were interviewed with a structured questions adapted from a user experience questionnaire to analyze their experience with the site. User Experience Questionnaire (UEQ) is an instrument used to process survey data related to user experiences that is easy to practice, trustworthy, based, and used to conduct subjective quality assessments [25]. UEQ allows for a rapid assessment of the user experience of interactive products. The main questions asked were about the experience about registration process, product entry, buying process, security, and the opinion on possibility for widespread use.

3. ANALYSIS AND DISCUSSION

The results of scenario testing of the e-commerce application warung-kampung.com are summarized in table 1 below:

Table 1. Scenario Testing Results on the Website

Scenario Testing Components	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6
<i>The effectiveness of warung-kampung.com</i>	100%	100%	100%	100%	100%	100%
<i>The efficiency of warung-kampung.com (goal/sec)</i>	0.092	0.170	0.124	0.139	0.074	0.124

website warung-kampung.com in terms of effectiveness and efficiency, both of which get good

results of effectiveness or ease of use.

Meanwhile, interviews with users using an adapted user experience questionnaire are summarized in the following table.

Table 2. Interview Summary

Main Topic	Statement	Code Number	Sentiment
<i>Registration Process</i>	"The registration process is easy"	S2,4; B1-8	Positive / good
	"I simply click Google to register, which is nice"	S1,5,9; B10	
	"It's fast, not many forms to fill in" "It's uncomplicated"	S6 S7,10; B9	
<i>Product Entry</i>	"I don't have any difficulties when filling in product details form"	S1,3-7	Positive / good
	"The instruction for uploading a product is clear and easy to follow"	S2,8-10	
<i>Choosing Goods</i>	"I like the categorization, making it easier to find the goods I want to buy"	B5,9	Almost good
	"The product photos and price	B3,8	

The result showed that the respondents experience good registration process, product entry, and security; almost good experience in choosing goods to buy; moderate experience for payment and opinion on possibility for widespread use; and almost bad experience for transaction processing. This indicates that warung-kampung.com provides convenience, especially those not accustomed to online sales applications.

4. CONCLUSION

This study aimed to analyze the effectiveness of using e-commerce for local based online trading, which is done by conducting usability testing through experimental studies, and interviews to analyze their experience with the site.

The results of scenario testing in the table above explain the level of usability of the e-commerce website warung-kampung.com in terms of effectiveness and efficiency, both of which get good results of effectiveness or ease of use.

While the interview showed that the registration process and product entry received a good response, and the security aspect was considered good. While the possibility of widespread use received moderate response.

However, this research is very lacking in the numbers of participants being researched. Thus, further research with bigger respondents can be done to get more accurate result.

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REFERENCES

[1] T. Papadopoulos, K. N. Baltas, and M. E. Balta, "The use of digital technologies by small and medium enterprises during COVID-19: Implications for theory and practice," *Int. J. Inf. Manage.*, no. June, p. 102192, 2020.

[2] OECD, "Coronavirus (COVID-19): SME Policy

- Responses,” *OECD.org*, 15-Jul-2020. [Online]. Available: https://read.oecd-ilibrary.org/view/?ref=119_119680-di6h3qgi4x&title=Covid-19_SME_Policy_Responses. [Accessed: 03-Sep-2020].
- [3] Winarsih, M. Indriastuti, and K. Fuad, *Impact of covid-19 on digital transformation and sustainability in small and medium enterprises (smes): a conceptual framework*, vol. 1194 AISC. Springer International Publishing, 2021.
- [4] L. Nasution, “Efektifitas HKI Sebagai Pelindung Industri Kreatif dan UMKM Di Tengah Pandemi Covid-19,” *Adalah Bul. Huk. keadilan*, vol. 4, no. 1, pp. 238–250, 2020.
- [5] J. Sheth, “Impact of Covid-19 on consumer behavior: Will the old habits return or die?,” *J. Bus. Res.*, vol. 117, pp. 280–283, 2020.
- [6] S. Bruque and J. Moyano, “Organisational determinants of information technology adoption and implementation in SMEs: The case of family and cooperative firms,” *Technovation*, vol. 27, no. 5, pp. 241–253, 2007.
- [7] C. M. L. Chan, S. Y. Teoh, A. Yeow, and G. Pan, “Agility in responding to disruptive digital innovation: Case study of an SME,” *Inf. Syst. J.*, vol. 29, no. 2, pp. 436–455, 2019.
- [8] C. Dibrell, P. S. Davis, and J. Craig, “Fueling innovation through information technology in SMEs,” *J. small Bus. Manag.*, vol. 46, no. 2, pp. 203–218, 2008.
- [9] L. Kleis, P. Chwelos, R. V Ramirez, and I. Cockburn, “Information technology and intangible output: The impact of IT investment on innovation productivity,” *Inf. Syst. Res.*, vol. 23, no. 1, pp. 42–59, 2012.
- [10] E. Turban, J. Lee, D. King, H. M. Chung, and J. K. Lee, *Electronic Commerce: A Managerial Perspective*. Prentice Hall, 2000.
- [11] M. Suyanto, *Strategi periklanan pada e-commerce perusahaan top dunia*. Yogyakarta: Penerbit Andi, 2003.
- [12] S. Haryono and Nurlaela, “Efektifitas Penggunaan Media E-Commerce Terhadap Peningkatan Pendapatan UMKM Depok Dilihat dari Etika Bisnis,” in *Seminar Nasional dan Diskusi Panel Multidisiplin Hasil Penelitian & Pengabdian kepada Masyarakat*, 2018, pp. 152–158.
- [13] S. Rosyad, “Efektifitas dan Efisiensi Penerapan E-Commerce Pada PT. Wahana Surya Plastik,” *J. Penelit. Ilmu Manaj.*, vol. 3, no. 1, pp. 627–637, 2018.
- [14] Fatmariyani, “Pengaruh Adopsi Teknologi Informasi Open Source E-commerce Terhadap Kinerja UKM dengan Faktor-Faktor Technology Acceptance Model (TAM) Sebagai Moderating Variabel,” *J. Teknomatika Palembang STMIK PalComTech*, vol. 1, no. 1, 2011.
- [15] F. I. Sevtian, “Pengaruh E-Commerce Terhadap Tingkat Volume Penjualan Sandal Kelom Geulis Di CV Kelomgeulis Tasikmalaya,” Universitas Pendidikan Indonesia, 2011.
- [16] S. Maryama, “Penerapan e-commerce dalam meningkatkan daya saing usaha,” *Liquidity*, vol. 2, no. 1, pp. 73–79, 2013.
- [17] O. W. Purbo and A. A. Wahyudi, “Mengetahui E-commerce,” *Jakarta Elex Media Komputindo*, 2001.
- [18] J. Rubin and D. Chisnell, “How to plan, design, and conduct effective tests,” *Handb. usability Test.*, p. 348, 2008.
- [19] Z. Amri, M. Z. Uska, and B. D. D. Arianti, “Analisis Usability Website Universitas Hamzanwadi terhadap Kepuasan Pengguna dengan Menggunakan User Satisfaction Model,” *EDUMATIC J. Pendidik. Inform.*, vol. 2, no. 1, pp. 15–23, 2018.
- [20] A. Seffah, M. Donyaee, R. B. Kline, and H. K. Padda, “Usability measurement and metrics: A consolidated model,” *Softw. Qual. J.*, vol. 14, no. 2, pp. 159–178, 2006.
- [21] S. H. Han, M. H. Yun, K.-J. Kim, and J. Kwahk, “Evaluation of product usability: development and validation of usability dimensions and design elements based on empirical models,” *Int. J. Ind. Ergon.*, vol. 26, no. 4, pp. 477–488, 2000.
- [22] C. Ardito *et al.*, “An approach to usability evaluation of e-learning applications,” *Univers. access Inf. Soc.*, vol. 4, no. 3, pp. 270–283, 2006.
- [23] K. S. Coulter, M. Brengman, and F. P. Karimov, “The effect of web communities on consumers’ initial trust in B2C e-commerce websites,” *Manag. Res. Rev.*, 2012.
- [24] K. Hassanein and M. Head, “Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping,” *Int. J. Hum. Comput. Stud.*, vol. 65, no. 8, pp. 689–708, 2007.
- [25] B. Laugwitz, T. Held, and M. Schrepp, “Construction and evaluation of a user experience questionnaire,” in *Symposium of the Austrian HCI and usability engineering group*, 2008, pp. 63–76