

The Use of ICT towards Women's Business Performance: The Case of SME in Padang City of Indonesia

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Abstract. The adoption of digital technology by SMEs is one of the potential means to accelerate opportunities for business development in order to be more efficient, competitive, and sustainable. The Covid-19 pandemic along with the impacts of limitations on community movement is the right moment for SMEs to digitize their business process. This study aims to analyze the use of ICT on women's business performance through a case study in Padang city of Indonesia. This study used quantitative methods with a total of 120 women's SMEs in the city as the samples. Partial Least Square (PLS) was used to test the hypotheses. The results of this study empirically proved that there were significant effects of ICT use on the performance of women's SMEs. Consequently, the use of ICT improved the business performance of women's SMEs in the study area. The findings can be used to motivate the women's SMEs to be mindful of the ICT that is becoming popular to be implemented with its various benefits in the business process either during or after the Covid-19 pandemic.

Keywords: ICT, Women entrepreneurs, Business performance.

1 Introduction

Information communication technology (ICT) has become a pillar of socio-economic development worldwide and is a necessity during a pandemic [1]. The current Covid-19 pandemic can be a moment to start digitizing businesses, especially those run by women. The Insight Center [2] said that during the pandemic online retail transactions significantly increased from 4.7% to 28.9% while offline transactions dropped from 52.3% to 28.9%. The increment includes business transactions among women entrepreneurs, especially in Small and Medium Enterprises (SMEs), which currently account for more than 50% owned and managed by women. According to data from the Ministry of Cooperatives and Small and Medium Enterprises, the number of entrepreneurs in Indonesia is continuously increasing. Not only the number of entrepreneurs as a whole, but the number of women entrepreneurs in Indonesia is also increasing. According to Bank Indonesia data, the number of SMEs in Indonesia in 2020 was 59.2 million, whereby 37 million were women entrepreneurs. Women entrepreneurs are mainly engaged in a variety of business fields such as culinary, education, garment, fashion, handicraft, cosmetics, spa, and others. This data shows the participation and role of women in supporting the Indonesian economy.

Digital development is one of the potentials that open up opportunities for many women entrepreneurs to able to develop their businesses. Women entrepreneurs refer to the women or a group of women who are wholly or partially own, innovate, regulate, and adapt a business activity [3]. ICT also known as information communication technology is a digital platform that generates opportunities for entrepreneurial activity by utilizing tools such as the internet, mobile technology, and social computing. Current emerging digital ICT technologies have strengthened business and at the same time solving problems in business processes for women entrepreneurs [4]. In the entrepreneurial process, innovation plays a major role involving various dimensions including individual, organizational, environmental, and collaborative processes in the business environment. Salam & Majumar [5] examined how ICT enables traditional housewives to reach a targeted audience and simultaneously investigated the effects of ICT on women's entrepreneurship. Pappas et al., [6] mentioned the emerging digital platforms such as ICT that are capable of creating opportunities for new types of entrepreneurial activity among women and revealing the women's entrepreneurial capabilities. However, few women are leveraging technology to fulfill their entrepreneurial aspirations in business, [7].

Looking at the Indonesia scenario, a study on the use of ICT and its impact on the performance of SMEs has been widely studied, such as [8] in Malang, East Java, [9] in Bantul Yogyakarta, and [10] in Indonesia. The results stated that the use of ICT for SMEs can increase productivity, build new business opportunities, and speed up communication and connection to global networks with an international business partner. Nonetheless, there is very little study on the use of ICT on the business performance of women entrepreneurs in Indonesia. As far as we know, only a study by [11] evaluated the internet adoption of women entrepreneurs to improve marketing performance. But this study specified internet adoption and women entrepreneurs. Besides the lack of studies, the previous research did not comprehensively discuss the adoption of ICT for women entrepreneurs as the actual current problem. Therefore, it is very crucial to carry out further research to fill in the gap in the previous studies. The focus should be given to the business performance of women SMEs.

Hence, this study aims to analyze the use of ICT on the business performance of women entrepreneurs in the city of Padang, West Sumatra. It is hoped that the findings of this study will be useful to promote the importance of the use of ICT as one of the components that facilitates business activities among women entrepreneurs. Apart from that, these findings will hopefully meet the government's program in promoting digital technology to empower women involved on a larger economic scale.

2 Literature Review

2.1 Information Communication Technology (ICT) in SMEs

ICT includes all network components, applications, devices, and systems combined, enabling organizations and individuals to interact in the digital world [1]. One form of

ICT is mobile phones, supported by wireless networks and the internet. The list of ICT components such as telephones and computers has existed for decades [12]. Others, such as digital TV, robots, and smartphones are newer models. Through the use of digital social media platforms, access to information about business processes and interactions with customers around the world will offer digital-based business management solutions that are superior and competitive.

The use of ICT as a new business model for SMEs provides new market access and new sources of competitive advantage [13] and [14]. The ICT is the most powerful tool for building and creating, sharing and transferring knowledge, and enhancing capabilities even in different locations, expanding different economies among many people, [15]. Without the use of ICT, SMEs will face serious consequences in the future that lead them left behind economically. On the contrary, with the digital technology in ICT, many SMEs businesses can strengthen their business, improve handle the level of uncertainty and solve the problems in regards with conventional businesses [16] and [17].

2.2 Business performance of SME women entrepreneurs

The women's SMEs in Indonesia play a role as a prime mover in driving the country's economy. During the COVID-19 pandemic, the percentage of women entrepreneurs in Indonesia was 21%. This percentage is quite higher than the global average of women entrepreneurs of 8%. This increase was due to the fact that many women who experienced layoffs turned to SMEs. This increase was due to the fact that many women who experienced layoffs turned to SMEs. The high number of women entrepreneurs continues to increase causing the phenomenon of entrepreneurial characteristics has changed [18]. The role of women entrepreneurs in the economic development of a country is very necessary for poverty alleviation [19].

Women entrepreneurs are women who are able to take risks in business and manage them. Women entrepreneurs are assumed to have experience with gender discrimination and they find more difficulties than their male counterparts in starting and running a business [16]. Even when issues such as barriers to women entrepreneurs are raised in gender and entrepreneurship debates, it is usually done from the perspective that women entrepreneurs are an untapped resource and have the potential to contribute to a country's economic performance.

2.3 The effect of using ICT on the business performance of women SMEs

ICT has been recognized as an important indicator of women's empowerment. Noor et al., [20] said that the use of ICT among women's SMEs can expand the participation of men and women in the country's economic growth. For this reason, women entrepreneurs must be able to express the development of their personality and capacity in doing business through the use of ICT [21]. According to Noor et al., [20] there is a strong positive correlation between the levels of economic digitization and labor productivity. Yang et al. [1] said the use of ICT in the business processes among women's SMEs

provides many benefits such as reduced transaction costs, online collection and processing of information, and faster and more accurate access to information. Thus, knowledge-based ICT is an important factor for women entrepreneurs to access the labor market and help empower women in society [22]. ICT is a new digital platform for women entrepreneurs in business, which provides many benefits to encourage the increased performance of women entrepreneurs [23] and [7]. However, to suit this situation, the standard of living and education level of women entrepreneurs are the main factors for the success of women's empowerment in developed countries.

H1: There is an effect of using ICT on the business performance of women SMEs

3. Method

The population of this research was the women's SMEs that are registered under the Department of Cooperatives & SMEs, Padang City, West Sumatra. This study used a quantitative approach with a sampling technique using random sampling with a simple random type. The data was collected by the survey method technique. Questionnaires were distributed directly face to face to women's SMEs. Partial Least Squares Equation Modeling (PLS-SEM) was employed in the data analysis.

ICT is a digital platform that generates opportunities for entrepreneurial activity by leveraging tools such as the internet, mobile technology, and social computing. The ICT adoption of SMEs using instruments from [14]. A total of 19 question items for ICT adoption were created to measure the underlying construct of the data using a Likert scale of 1 (very dissatisfied) to 5 (very satisfied).

While the measures of women's business performance instruments included sales growth, gross profit, return on investment, and growth in the number of employees, [18] with 8 question items using a Likert scale of 1 (strongly disagree) to 5 (very satisfied).

4. Result and Discussion

A total of 122 questionnaires were sent directly to the sampled women's SMEs. From that number, 120 out of 122 respondents returned complete responses, except 2 respondents returned incomplete responses, hence, they were excluded from the analysis. The number of questionnaires processed in this study amounted was 120 questionnaires. The collecting questionnaires reflected the response rate was 96.8% of the total respondents.

The characteristics of respondents who answered the questionnaire were dominated by SME business with a position as a business owner of 86 respondents or 71.7% and the rest had positions as staff. From the education level, the majority of respondents were senior high school level with a total of 93 respondents or 77.5% as compared to only 5 respondents of junior high school level as the least with a portion of 4.2%. The

age ranged from 26-35 years were 53 respondents (44.2%). Based on the type of business, women's SMEs were mostly engaged in the culinary business, which accounted for 36 respondents (30%), followed by the fashion business of 25 (20.8%). The monthly income ranged from 5 million IDR to 3 million IDR with the segment of 53% and 3.44%, respectively. Meanwhile, the type of ICT used by respondents was m-commerce, which was used by 89 respondents (74.2%)

Assessment of the measurement model for all indicators was carried out by testing the loading factor, Cronbach's alpha composite reliability, and average variance extracted (AVE). All indicators in Table 1 are valid and meet the criteria recommended [24] and are also declared good categories because the outer loading value is > 0.7 . Factors having a value lower than the recommended value of 0.7 are omitted.

Table 1 The result of the measurement model

Constructs	Factor Loading	Cronbach's Alpha	Composite Reliability	AVE
Rule of thumb	> 0.7	> 0.7	> 0.7	> 0.5
<i>Information Communication and Technology (ICT)</i>		0.914	0.929	0.593
Self-confidence as a user of ICT (ICT1)	0.739			
M-commerce is easier for business transactions because its equipment i.e., smartphones can move freely and easily (ICT4)	0.765			
Information communication technology and information systems are implemented regularly in business (ICT5)	0.808			
Having an interest in allocating the investment for implementing ICT in business (ICT8)	0.803			
The implementation of ICT lifts up business profits (ICT9)	0.755			
Management decision by the implementation of ICT provides a quick response to consumers (ICT13)	0.756			
As entrepreneurs must be able to give support in using ICT (ICT14)	0.762			
Entrepreneurs must be acquainted with the use of ICT (ICT15)	0.771			
Having an interest in reskilling knowledge of ICT (ICT17)	0.770			
<i>Business Performance</i>		0.887	0.914	0.640
I am satisfied that the increase in employment growth has an impact on economic growth in the region (WP8)	0.770			
I need high efficiency in operation (WP9)	0.838			
I need high productivity (WP10)	0.797			
I need to generate better business performance than business competitors (WP11)	0.814			
My product must be able to satisfy consumers (WP13)	0.758			
In general, I need business performance always improve (WP14)	0.821			

Source: SEM-PLS, (2022)

Cross-loading and Fornell-Larcker criteria were used to test the discriminant validity of the concept [25]. Based on the results obtained in Table 2, it can be stated that the indicators used in this study have good discriminant validity in compiling their respective variables [24]. The values of R square and Q square of the results of this study are in Table 3. The R square test obtained a coefficient value of 0.427, thus it can be concluded that the contribution of the women's business performance variable to the formation of ICT is 42.7%, and the contribution given by all these variables is weak [26]. Structural model measurements are shown in Figure 1.

Table 2 Discriminant validity

	Information Communi- cation and Technology (ICT)	Women's business perfor- mance
Information Communication and Technology (ICT)	0.770	
Women's business performance	0.654	0.800

Source: SEM-PLS, processed (2022)

Table 3 R Square value

	R Square	R Square Adjusted	Result
Women's business performance	0.427	0.423	Weak

Source: SEM-PLS (2022)

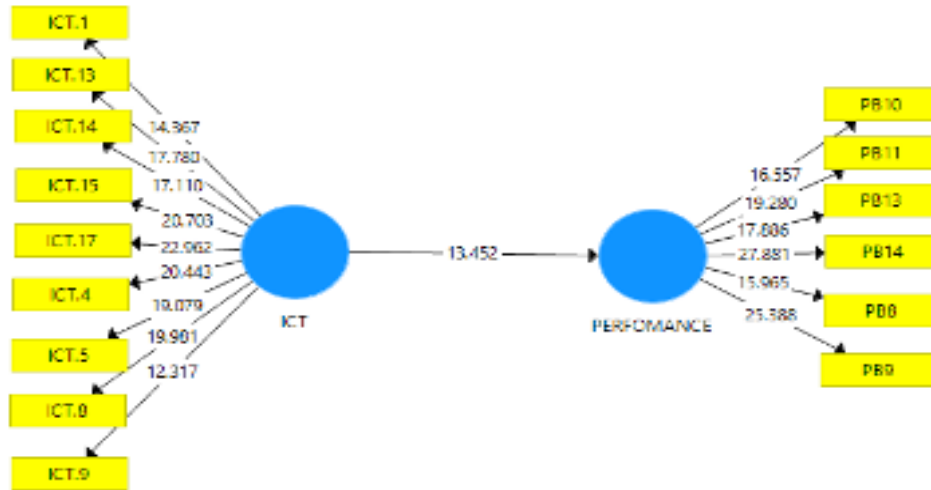


Figure 1: The result of the structural model

Source: SEM-PLS (2022)

The results of hypothesis testing with a P-value of 0.000 explained that there was a significant effect of using ICT on the performance of women's SMEs (see Table 4).

The results indicated that the application of ICT is able to provide benefits to the business performance of women's SMEs in developing their businesses. This proved that women's SMEs treat ICT as an important tool that contributes to their business success. This finding is also in line with the previous studies, which mentioned that proper use of ICT capable of providing various opportunities for the business development of women entrepreneurs. In fact, ICT is also a power to drive business globally [27]; [28]; [29];[30] and [31].

Table 4 Results of hypothesis testing

Model	Original Sample (O)	Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P-Values	Hypothesis Results
ICT→W P	0.654	0.667	0.049	13.452	0.000	H1 Accepted

Source: SEM-PLS, processed (2022)

5. Conclusions

The use of ICT has a significant effect on women's business performance. However, bear in mind that the use of ICT requires a creative process of exploring technology in various business tasks such as compiling letters, preparing reports, setting up databases, planning, budgeting, solving overall problem analysis, and so on. Therefore, for this reason, women's SMEs in the study area must be able to adapt to the trend of technological sophistication in order to be competitive and survive in business competition. The use of ICT eases women's SMEs in making quick communication with suppliers, vendors, retailers, sellers, customers, and other parties.

Consequently, it is suggested that women entrepreneurs will be more active in the use of ICT, and involved in more training programs and workshops. To smooth the implementation of this program, support should be provided by the government agencies and ministries for women entrepreneurs, especially for those women's SMEs living in rural areas in order to be more familiar and confident with the use of ICT. These programs can be delivered either free of charge or with a charge depending on the type and level of training and workshops given. Conclusively, the use of ICT can reduce production costs and at the same time increase the overall income of SMEs. Utilization of ICT for business activities will be able to improve business performance because, in today's modern business life, entrepreneurs must be able to follow the trends of technological sophistication to make their businesses viable and sustainable.

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References

1. Yang, S., Fichman, P., Zhu, X., Sanfilippo, M., Li, S & Fleischmann, K.R: The use of ICT during COVID-19. Panels and Alternative Events 1–5 (2020).
2. Insight Center. Digitalisasi UMKM di Tengah Pandemi Covid-19., (2020) <https://katadata.co.id/umkm> last accessed 2022/05/22
3. Mohan Kumar, H.S. Chandrika Mohan, Vijaya C, & Lokeshwari N.: The Role of Women Entrepreneurship in Modern World. *International Journal of Current Engineering and Technology*, (1), 100–104. (2013).
4. Othman, N. A., & Omar, F. I.: Cognitive Needs of ICT usage in Business Among Women Entrepreneurs. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*, 8(7S2), 8–12 (2019).
5. Salam., A & Majumar.S.K.: The effect of ICT on women entrepreneurship. 5th International Conference on Economic Growth and Sustainable Development: Emerging Trends. Mysuru, India November 15-16, (2019).
6. Pappas, M. A., Drigas, A. S., Papagerasimou, Y., Dimitriou, H., Katsanou, N., Papakonstantinou, S., & Karabatzaki, Z.: Female Entrepreneurship and Employability in the Digital Era: The Case of Greece. *Journal of Open Innovation: Technology, Market and Complexity*, 4(15), (2018).
7. Afsana, S.: Impact of Digitization on Women Entrepreneurs. *International Journal on Recent Trends in Business and Tourism*, 2(4); 1-4. (2018).
8. Djatikusumo., N.K.: Pengaruh Penggunaan Teknologi Informasi dan Komputer terhadap Kinerja Organisasi (Studi Kasus di UMKM Kota Malang). 1th Industrial Research, Workshop, and National Seminar. Politeknik Negeri Bandung, July 28-29. (2016).
9. Endraswari., R.M.: Faktor-faktor yang mempengaruhi Aplikasi Teknologi Informasi dan Pengaruhnya terhadap Kinerja Perusahaan (Studi Pada UKM Kerajinan Tangan Bantul, Yogyakarta. Tesis Program Studi Magister Manajemen Program Pasca Sarjana Universitas Diponegoro Semarang. (2006).
10. Basry., A., Sari.E.M.: Penggunaan Teknologi Informasi dan Komunikasi (TIK) pada Usaha Mikro, Kecil dan Menengah (UKM). *Jurnal IKRA-ITH Informatika* 2(3), 53-60 (2018)
11. Widiatmoko., K. WismantoroY & Aryanto.V.D.W.: Adopsi Internet para Wirausaha Perempuan untuk Meningkatkan Kinerja Pemasaran. Studi Kasus Batik Tulis Pewarna Alami Kebon Indah Klaten. *Forum Manajemen Indonesia (FMI)* 9, ISSN: 1412-3126. (2017).
12. Chen, A. N., Castillo, J., & Ligon, K.: Information and communication technologies (ICT): Components, dimensions, and its correlates. *Journal of International Technology and Information Management*, 24(4), 2-10(2015).
13. Apulu I, Latham A and Moreton R.: Factors affecting the effective utilization and adoption of sophisticated ICT solutions: Case studies of SMEs in Lagos, Nigeria. *Journal of Systems and Information Technology* 13(2), 125–14 (2011).
14. Hoque. Md. R, Mohammad Saif., A.N., AlBar., A.M & Bao.Y., Adoption of information and communication technology for development: A case study of small and medium enterprises in Bangladesh. *Information Development* 1–15 (2015).

15. Rahayu, R. and Day, J.: E-commerce adoption by SMEs in developing countries: evidence from Indonesia, *Eurasian Business Review*. 7 (1), 25-41 (2017).
16. Okundaye., K.Fan S.K & Dwyer. R.J.: Impact of information and communication technology in Nigerian small-to-medium-sized enterprises. *Journal of Economics, Finance and Administrative Science*. 24 (47), 29-46 (2018).
17. Nambisan, S.: Digital entrepreneurship: toward a digital technology perspective of entrepreneurship. *Entrepreneurship Theory and Practice*. 41(6), 1029-1055 (2017).
18. Oni, O., Agbobli, E. K., & Iwu, C. G.: Entrepreneurial orientation and performance of the small business in Vryburg region northwest Province South Africa. *Journal of Reviews on Global Economics*, 8, 63–71(2019).
19. Fatima S.M.A Hasan., Almubarak, M.M.S. Factors influencing women entrepreneurs' performance in SMEs. *World Journal of Entrepreneurship, Management, and Sustainable Development*. 12 (2), 82-101(2016).
20. Noor, A., Asghar, Z., Sarwar, H., & Arfeen, M. I.: Role of the ICT in Women Empowerment and Achieving SDGs: A Case Study of Women Labor Force in Developing Countries. *Ekonomi*, 20(2), 339 – 348 (2021).
21. Mathew, V. Women entrepreneurship in the Middle East: understanding barriers and use of ICT for entrepreneurship development. *International Entrepreneurship and Management Journal*. 6 (2), 163-181 (2010).
22. Aydin, M.: Does the Digital Divide Matter? Factors and Conditions That Promote ICT Literacy. *Telematics and Informatics*, 58, 101536 (2021).
23. Welsh, D. H. B., Kaciak, E., Memili, E., & Minialai, C.: Business-family interface and the performance of women entrepreneurs: The moderating effect of economic development. *International Journal of Emerging Markets*, 13(2), 330–349 (2018).
24. Hair, J. F., B. Black, B. Babin.: *Multivariate data analysis*. 8th ed. Upper Saddle River, New Jersey USA: Pearson Prentice Hall. (2018).
25. Fornell, C., & Larcker, D. F.: Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18, 382-388(1981).
26. Chin, W.W.: How to Write Up and Report PLS Analyses. In: Esposito Vinzi, V., Chin, W.W., Henseler, J. and Wang, H., Eds., *Handbook of Partial Least Squares: Concepts, Methods, and Applications*, Springer, Heidelberg, Dordrecht, London, New York, 655-690 (2010)
27. Lailah, F. A., & Soehari, T. D. the Effect of Innovation, Information Technology, and Entrepreneurial Orientation on Business Performance. *Akademika*, 9(02), 161–176 (2020).
28. Okundaye., K.Fan S.K & Dwyer. R.J: Impact of information and communication technology in Nigerian small-to-medium-sized enterprises. *Journal of Economics, Finance and Administrative Science*. 24 (47), 29-46. (2018).
29. Chen, A. N., Castillo, J., & Ligon, K.: Information and communication technologies (ICT). Components, dimensions, and their correlates. *Journal of International Technology and Information, Management*, 24(4), 20-30(2015).
30. Ong, S., On Yong, Y. O., Habidin, Nurul, F. H., & Salleh, M. I. S.: The relationship between women's entrepreneurship practice ICT adoption, and business performance in Malaysia and Indonesia. 39(4), 530–547. (2020).