



The Direct and Indirect Influence of E-Commerce Capability on Sustainable Competitive Advantage: The Importance of Agility

Desman Hidayat¹, Nur Farahim Sudirman², Silvia Andika³, Patricia⁴, Okta Prihatma Bayu Putra⁵,
Christian Haposan Pangaribuan⁶, Pananda Pasaribu⁷

¹ BINUS Entrepreneurship Center, Management Department, Bina Nusantara University, Jakarta, Indonesia 11480

^{2,3,4,5} BINUS Business School Undergraduate Program, Management Department, Bina Nusantara University,
Jakarta, Indonesia 11480

^{6,7} Faculty of Business, Sampoerna University, Jakarta, Indonesia 12780

ABSTRACT: The COVID-19 pandemic has affected the business industry, including female entrepreneurs, to remain competitive. With agility, the businesses could develop better predictability and survive in a changing environment. At the same time, e-commerce can also be used as a source of competitive advantage. This study aims to identify the effect of business agility and e-commerce capability to increase the sustainable competitive advantage of womenpreneurs' business. The analytical approach applied in this research is the Structure Equation Modelling (SEM) with 30 samples of women entrepreneurs in Jakarta. The finding of this study shows that e-commerce capability does not have any significant direct impact on sustainable competitive advantage. At the same time, business agility has a direct impact and acts as a mediating variable for business agility on sustainable competitive advantage.

KEYWORDS: Business Agility, Electronic Commerce, Sustainable Competitive Advantage, Women Entrepreneurs.

INTRODUCTION

Currently, more and more women are participating as entrepreneurs while contributing to economic development, employment creation, and improvement of standards of life (Ndofirepi, 2020). For the last decade, women in entrepreneurship are now considered a phenomenon in Indonesia as the vast untapped potential while underrepresented at the same time (Manolova et al., 2020). Although e-commerce capabilities can help 'female entrepreneurs' ensure their personal peace of mind and sense of worth to better serve their family and society, they have rarely been examined under the same study.

Accordingly, it is imperative to achieve a sustainable competitive advantage as it influences organizational performance in e-commerce (Ruiz-Mercader et al., 2006). In addition, such capabilities in impacting sustainable competitive advantage have not been overlooked by previous studies. Nevertheless, the existing research in this field has a limitation. A systematic review by Li et al. (2020) indicated mixed findings about the influence of e-commerce capabilities on performance gains. Moreover, a previous study by Jovanovich et al. (2020) indicated that e-commerce capabilities have negative effect on performance. The results of previous studies are thus inconsistent.

To resolve this inconclusive finding in prior research, this study relies on the mediating approach. Consequently, the impact of e-commerce on sustainable competitive advantage would not be direct, but rather dependent on business agility. Therefore, the objective of this study was not to analyze the direct link between e-commerce and sustainable competitive advantage but to comprehend if this relationship is mediated by the business agility. The rationale for choosing business agility as a mediating factor is based on the fact that it adjusts internally (Pradipto et al., 2018) and exploit opportunities externally to attain competitive advantage (Cheng et al., 2020). Therefore, it is necessary to understand how we can respond quickly to unforeseen fluctuations to obtain and analyze information available externally (Ravichandran, 2018).

To address these voids, the present study explores the influence of business agility as a mediator between e-commerce capabilities and sustainable competitive advantage. In the following sections, a summary of the literature introduces each of the research variables, followed by hypothesis development. Afterward, the methods and the results are explained in the following sections. The study is concluded with a discussion of theoretical and managerial implications, limitations, and recommendations of future research.



LITERATURE REVIEW

E-commerce Capability

E-commerce capabilities are one of the company's strategies because, with the internet, companies can share information, conduct online transactions, and improve customer service. While on the customer side, e-commerce can make it easier for customers to buy products, starting from product catalogs, online transactions to tracking orders tailored to customer needs (Zhu, 2004). E-commerce capabilities are a sort of IT capability that is distinct from others Li et al. (2020). Eikebrokk and Olsen (2007) listed three critical parts of e-business competency and success in small and medium-sized enterprises (SMEs): e-business strategy, IT-business process integration, and systems and infrastructure. Straub and Klein (2001) state that e-commerce provides the company with a resource that cannot be replaced or easily copied (such as customer proprietary data and shared information).

Business Agility

The literature Madhok and Marques (2014) claim the prevalence of instability business circumstances impose to implement agility to assure their survival. According to Nissen and Von Rennenkampff (2017), organizational agility is a conversion towards the future to identify possibilities or challenges before they happen and possess the abilities and resources to transform before they are clear to others. Qin and Nembhard (2010) define organizational agility as a solution to an unpredictable condition that possibly occurs in the future and changes continuously, enabling an organization to increase and develop in a competitive situation. In agile enterprises, agility is a primary ability to adapt through environmental changes not as temporary but as the continuing process (Goldman et al., 1995). To conclude, organizational agility is essential because businesses need to adapt faster and flexibly through environmental complexity and survive an unpredictable situation.

Sustainable Competitive Advantage

Sustainable competitive advantage is the most influential element in the process of a business. By having the advantage to compete, companies tend to get more advantages than other companies and beat profitability, market share, growth, and others (Kim et al., 2020). The company's competitive advantage comes from dynamic capabilities embedded in high day-to-day performance, embedded in company processes, and conditioned by its development process (Teece & Pisano, 1994). To conclude, from sustainable competitive advantage, we can identify and learn how to compete competitively by utilizing today's technology and maximizing the use of resources.

Hypotheses Development

E-commerce directly impacts a company's relationships with suppliers, customers, competitors, and partners and how companies market products, advertise and use brands (Laudon & Traver, 2016). Thus, high-level e-commerce capabilities help companies obtain information on consumers, competitors, and supply chain members and quickly respond to product and service requirements changes, thereby gaining a competitive advantage (Lin et al., 2020). In addition, e-commerce capabilities are the key to providing a competitive advantage for companies by improving service and customer satisfaction (Mutuku, 2019).

H₁: There is a positive and significant effect of e-commerce capability towards sustainable competitive advantage.

E-commerce capability has a significant effect on business agility. With the help of e-commerce capability, companies can identify, analyze, and potentially predict opportunities and challenges in the business (Chen et al., 2017). In addition, the role of e-commerce capability can help companies integrate information through technology and use it to achieve business opportunities in a dynamic environment. E-commerce capability can be done by making and implementing decisions quickly and finding a technology system to adapt and innovate (Lin et al., 2020).

H₂: There is a positive and significant effect of e-commerce capability towards business agility.

Khoshnood and Nematizadeh (2017) revealed that to achieve a competitive advantage, it is necessary to develop strategic agility, and the tests conducted using the Pearson correlation test show a positive influence between strategic agility and competitive advantage. This positive influence is also expressed by Lee et al. (2017) on tests used through the PLS method shows that agility affects organizational performance by developing innovation, entrepreneurship, and market orientation, where increasing organizational performance results in the emergence of competitive advantage.

H₃: There is a positive and significant effect of business agility towards sustainable competitive advantage.

The study of Qosasi et al. (2019) suggests that business agility as a mediation affects the relationship between Information and Communication Technology (ICT) and competitive advantage. The study reveals that the government works with operators to

support small businesses with ICT to engage and use e-commerce. At the same time, companies used websites to improve customer relations to achieve a competitive advantage (2001).

H4: There is a positive and significant indirect effect of e-commerce capability towards sustainable competitive advantage mediated by business agility.

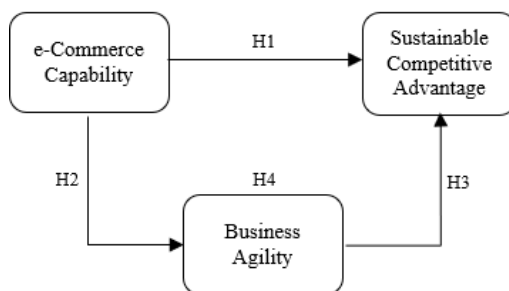


Figure 1. Research Model

RESEARCH METHODOLOGY

The purpose of this study is to examine how e-commerce capability could impact sustainable competitive advantage and with the mediation of business agility on that impact (Figure 1). In this study, the analysis was using a quantitative research method and conducted with online questionnaires. The questionnaires were only collected once in a certain period, also known as cross-sectional research (Priyono, 2008). These questionnaires used a five-point Likert scale with a close-ended question, which the respondent can only choose to answer based on the choices that have been provided by the researcher (Sekaran & Bougie, 2016). Likert with a five-point scale is often used and recommended because it can reduce respondent’s frustration level and improve the quality of the answer given by respondents (Priyono, 2008). The unit analysis of this study is womenpreneurs in Jakarta. According to the 2019 Publication of the Profile of the DKI Jakarta Province Micro Small Industry, the population of womenpreneurs in Jakarta is 66,864 women (BPS, 2019).

The study used simple random sampling, which is a type of probability sampling design. The minimum sample was 14 data, 5% significance level, and minimum R² of 0.50 (Hair et al., 2017). Therefore, the samples are sufficient for this study. The survey was conducted from April to May 2021.

Table 1. Number of Employees

Number of Employees	Frequency	Percentage
0-2	25	83%
3-4	3	10%
5-7	2	7%

Based on Table 1, most of the respondents (83%) have 0-2 employees, 10% of respondents have 3-4 employees, and 7% have 5-7 employees. This data shows that the womenpreneurs in Jakarta most likely do not need many employees to help their business.

Table 2. Period of Establishments

Established Period	Frequency	Percentage
<1 year	18	60%
1-5 years	12	40%

Most of the respondents (60%) were established their business for less than one year (see Table 2). In contrast, the other (40%) have been established for 1-5 years. This data shows that the womenpreneurs in Jakarta most likely open their business in less than one year. The pandemic COVID-19 could cause the new business opening.



Table 3. Business Scale

Enterprise Scale	Frequency	Percentage
Micro Business	28	93%
Small Business	2	7%

From Table 3, we can see that most respondents (93%) run micro-businesses, while others (7%) run small businesses. The data show that womenpreneurs in Jakarta most likely run a micro-business than a small business. The category of business scale is based on Indonesian Micro, Small, and Medium Enterprise Regulation No.20 (2008), where micro-business revenue is less than 300 million IDR and small business revenue is set on >300 million-2.5 billion IDR. This study analyses data using partial least squares structural equation modeling, also known as the PLS-SEM method. PLS-SEM is a variance-based method to estimate SEM. It is mainly used to develop theory in exploratory research. It focuses on maximizing explaining the variance of endogenous latent variables (Hair et al., 2018).

Table 4. Validity and Reliability Tests

Variables	Indicators	Items	Instruments	Outer Loading	α	CR	AVE
BA	Responsiveness	BA1	Our business can sense, perceive, and anticipate changes	0.824	0.892	0.926	0.757
		BA4	Our business can prepare and adjust to market changes	0.845			
	Quickness	BA5	Our business will deliver product in the shortest possible time	0.891			
		BA6	Our business operates efficiently	0.917			
EC	Product Review	EC2	Customer can leave a review of the products they have purchased	0.888	0.928	0.954	0.874
	Online Order Tracking	EC4	Customer can track the status of order status online	0.963			
		EC6	Customer can view the process and delivery status of their products	0.952			
SCA	Growth	SCA1	Increase in sales and revenue	0.841	0.895	0.927	0.760
		SCA2	Increase in customer satisfaction	0.873			
		SCA3	Our business reacts more quickly to change	0.919			
	Innovation	SCA4	Our business can shorten the period for product development	0.852			

BA = Business Agility

EC = E-commerce Capability

SCA = Sustainable Competitive Advantage

CR = Composite Reliability

AVE = Average Variance Extracted

RESULTS AND DISCUSSION

This study used software called Smart-PLS to process the data, which measure the validity, reliability and determine the relationship between items or variables. The first step is convergent validity, where it is measured by value of outer loading. If an item has more than 0.7 outer loadings, then it is valid, if it has less than 0.7 outer loadings, then it will be eliminated. From 20 items tested using Smart-PLS, nine items are eliminated due to not achieving the testing standard. In addition, the other remaining items in Table 4 have more than 0.7 outer loadings, are proven to be valid. Items considered reliable should have Cronbach’s Alpha > 0.7, CR > 0.7, and AVE > 0.5. Table 4 shows that the remaining items above are reliable.



Table 5. Fornell-Larcker Criterion

	BA	EC	SCA
BA	0.870		
EC	0.549	0.935	
SCA	0.830	0.547	0.872

Based on Table 5, discriminant validity with the Fornell-Larcker Criterion result shows that all three variables above are valid. This validity is because the correlation between variables itself has the highest number than other variables (BA to BA, EC to EC, and SCA to SCA). Besides Fornell-Larcker Criterion, discriminant validity can also be viewed by Cross Loadings. As seen in Table 6, all items above are valid because each item has a higher number than other variables.

Table 6. Cross Loadings

	BA	EC	SCA
BA1	0.824	0.584	0.718
BA4	0.845	0.445	0.623
BA5	0.891	0.496	0.732
BA6	0.917	0.374	0.801
EC2	0.440	0.888	0.460
EC4	0.566	0.963	0.518
EC6	0.524	0.952	0.551
SCA1	0.667	0.327	0.841
SCA2	0.720	0.495	0.873
SCA3	0.703	0.517	0.919
SCA4	0.791	0.546	0.852

R-Square is used to determine the effect of exogenous variables on the endogenous variable. This study used R-Square Adjusted to determine the effect because it corrected on the standard error value and gives a more robust picture than R-Square. Based on Table 7, Business Agility (BA) obtained a 0.301 of R-Square and 0.276 of R-Square Adjusted values. The result means that 27.6% of business agility is affected through e-commerce capability. Other than that, Sustainable Competitive Advantage (SCA) obtained 0.701 of R-Square and 0.679 of R-Square Adjusted. Therefore, 67.9% of sustainable competitive advantage is affected by e-commerce capability and business agility.

Table 7. R-Square

	R ²	R ² Adjusted
BA	0.301	0.276
SCA	0.701	0.679

Table 8 is the test result of PLS-SEM in this study. After running the validity and reliability tests, the next step was to run the test for bootstrapping with 5,000 subsamples that show the path coefficient in Table 8. The original sample is to find out whether the effect of variables is positive or negative. An effect is negative if there is a minus sign in the original sample number. If there is no minus sign, then the effect is positive. The significance of an effect can be seen on t-statistic or p-value. The t-statistics should be >1.960 and the p-value <0.050 for a significant path on 5% error rate.

Table 8. Bootstrapping Result

	Original Sample	T-Statistic	P-Value	Remark
EC -> SCA	0.131	0.971	0.331	Not Significant
EC -> BA	0.549	5.307	0.000	Positive, Significant
BA -> SCA	0.758	8.102	0.000	Positive, Significant
EC -> BA -> SCA	0.416	4.345	0.000	Positive, Significant

As seen in Table 8, the direct impact of e-commerce capabilities towards sustainable competitive advantage does not look significant. Nevertheless, the direct effect of e-commerce capabilities towards agility is significant. Furthermore, the direct effect of business agility towards sustainable competitive advantage is also positive and significant. Lastly, the indirect effect of e-commerce capability is positive and significant on sustainable competitive advantage mediated by business agility. The research model of bootstrapping results can be seen in Figure 2.

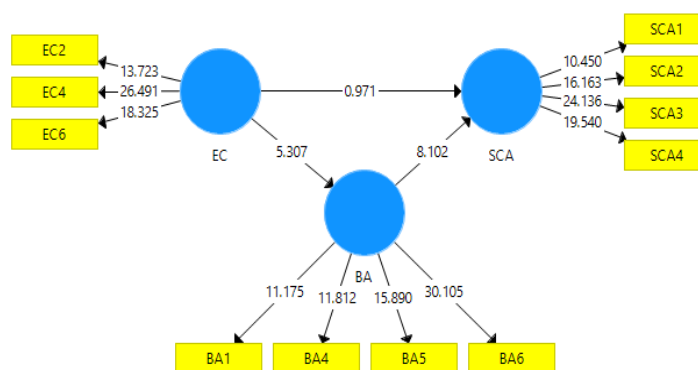


Figure 2. Path Coefficient Research Model

Based on this research, the direct influence of e-commerce capabilities towards sustainable competitive advantage is not significant. It can be seen on Table 8 that EC to SCA has t-statistic $0.971 < 1.960$ or P-value $0.331 > 0.050$ which mean not significant. This statement contrasts with previous researchers (Lin et al., 2020; Mutuku, 2019; Hariandi et al., 2019). E-commerce should help SMEs achieve a competitive advantage, especially in this era that already develops and uses technology. In addition, the COVID-19 pandemic also made several area lockdowns, which made e-commerce helpful on purchasing products that we needed. Therefore, hypothesis 1 is rejected.

The direct impact of e-commerce capabilities towards business agility is positive and significant. It can be seen in Table 8 that EC to BA has 0.549 value of the original sample which means positive and t-statistic $5.307 > 1.960$ or p-value $0.000 < 0.050$, which indicated a significant result. This statement is also supported by previous research (Lu & Ramamurthy, 2011). Therefore, environmental uncertainty requires entrepreneurs to implement e-commerce capability to achieve agility in business. Thus, hypothesis 2 is accepted.

The direct effect of business agility towards sustainable competitive advantage is positive and significant. It can be seen in Table 8 that BA to SCA has 0.758 value of the original sample which means positive and t-statistic $8.102 > 1.960$ or p-value $0.000 < 0.050$, which means that the result is significant. This statement is supported by previous researchers (Khoshnood & Nematizadeh, 2017). Therefore, agility will affect competitive advantage by sensing and seek the opportunity to respond faster than competitors. Therefore, hypothesis 3 is accepted.

The indirect effect of e-commerce capability on sustainable competitive advantage mediated by business agility is proven to be positive and significant. Table 8 shows that value of original sample is 0.416 which mean positive and t-statistic $4.345 > 1.960$ or p-value $0.000 < 0.050$ which mean significant. This statement is supported by previous research (Qosasi et al., 2019). Businesses could develop agility through e-commerce to anticipate, adapt, and respond to the uncertain environment that may occur, improving or enhancing competitive advantage. Therefore, hypothesis 4 is accepted.



CONCLUSION

This study aims to obtain information related to the relationship or effect of e-commerce capability on sustainable competitive advantage and business agility mediation. Based on Table 8, the indirect effect of e-commerce capabilities on the sustainable competitive advantage mediated by business agility shows a positive and significant effect.

In this digital era where pandemic COVID-19 exists, womenpreneurs are advised to be more agile and use e-commerce capability to achieve sustainable competitive advantage. Thus, implementing e-commerce capability and business agility (either directly or as a mediation) may create a significant and positive sustainable competitive advantage for womenpreneur businesses in Jakarta.

For further research, it is recommended to get a more significant number of respondents so that the research is more qualified to represent womenpreneurs in Jakarta. In addition to distributing questionnaires online, further researchers are also advised to conduct interviews with the womenpreneurs directly so that it is possible to get different results. Choosing a type of business sector as the object can also enrich research because this study does not classify the business sector in Jakarta. By choosing a business sector, the results can represent the research of the business sector and can see the development of the business sector that has been determined.

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