

E-Commerce Maturity and E-Commerce Performance in Indonesia

IVAN TRIYOGO PRIAMBODO, SASMOKO SASMOKO*, SRI BRAMANTORO ABDINAGORO,
AGUSTINUS BANDUR

Binus Business School, Doctor of Research in Management, Bina Nusantara University, INDONESIA

Abstract: Creative business has become another marvel in the monetary field and has become another establishment for the world economy in Indonesia. In the event that we think about the economies of size of the Creative Economy against the National Economy, there is a great deal of potential that can be accomplished through the execution and utilization of the web in the Creative Economy. COVID-19 pandemic has energized entrepreneurs, particularly in the Creative Industry, to have the option to build up their dynamic capacities so they can make due in an unsure financial circumstance. The motivation behind this study is to investigate and clarify E-Commerce Maturity as the reason for the focal point of Indonesian Creative Industry business visionaries during the COVID-19 pandemic in the new ordinary time in Indonesia. This investigation has taken 383 respondents of business visionaries who are occupied with imaginative enterprises and have applied the idea of E-Commerce in their business activities taken as tests and dissected quantitatively utilizing Structural Equation Modeling. E-Commerce maturity provide significant impact towards e-commerce performance.

Keywords: Creative Industry, E-Commerce, E-Commerce Maturity, E-Commerce Performance

Received: July 26, 2021. Revised: August 23, 2022. Accepted: September 20, 2022. Published: October 25, 2022.

1. Introduction

Creative Industries have been another marvel with gigantic potential for domestic market, yet at the same time additionally growing their impact towards export market. Industry 4.0 has pushed the development of creative firms to embrace computerized culture quicker than previously, including the utilization of E-Commerce as one of primary channel for selling their labor and products. It is a novel exchanging technique permitting shoppers to perform online exchanges (Singh et al., 2021). These type of electronic sales channel helps numerous SME to infiltrate market proficiently, particularly during COVID-19 pandemic period which have limits their direct and personal selling channels or even disconnected towards some extent. Accordingly, E-Commerce may refer as all electronic worth value chain to achieve the targets of a business where cycles can happen mostly or absolutely and can consolidate B2B-B2C-C2B trades (Wigand, 1997). In more explicit terms, E-Commerce as online business may address the usage of the web and various associations for buying and selling works out, both sending or exchanging data related to items and endeavors, where they similarly envision that the broadest significance of E-Commerce is on a very basic level indistinguishable from the meaning of E-Business itself (Turban et al., 2018). The usage may not be limited to only online marketplace, but also the use of any application which enable transaction based on online method.

The digital state a company may affect the overall business process. The degree of digital maturity of a

company bring positive influence on company performance (Eremina et al., 2019). This may also be implied for e-commerce which may considered as one of digital tools for company. Industry 4.0 heavily depends on how good a company utilize their technology resources, including e-commerce. In addition to the general benefits, the level of maturity of e-commerce in Indonesian SMEs can also offer business benefits, including business performance (Triandini et al., 2017).

Digital maturity state, especially when it related with e-commerce, can be seen as one of the important values in this Industry 4.0 era. On the other hand, the relationship between company value and its performance may be found within the conception valuable creation, that is closely regarding the concept of resource-based view and its impact on company performance (Zhu & Kraemer, 2005). Performance review cannot be separated from executive point of view. From a management perspective, business leaders need to consider business value as a strategic goal to ensure the improvement of business performance (Ji-fan Ren et al., 2017). Nevertheless, current situation does not show distinct relation and its influence between e-commerce maturity towards company's e-commerce performance. Furthermore, the tools of how to measure e-commerce maturity and performance for creative industry still need to be explored.

COVID-19 pandemic has pushed every line of business to engage customers through online channels. Nevertheless, every firm has different company value of E-Commerce which may impact their relationship between maturity and performance. These conditions

also applied towards creative industry business which rely heavily on their products uniqueness and resources.

Indonesia creative industry can be characterized as the epitome of increased the value of protected innovation rights that comes from human inventiveness which depends on science, culture, and innovation. Different subsector in this kind of Industries furnish remarkable attributes contrasted and other sort of business. The vast majority of the business in this area may classified as SME regarding business scale. These unique traits may require different treatment with other business in distinct industries. Therefore, this study aimed to explore the role of E-Commerce Maturity and impact towards creative firms' e-commerce performance and its contribution related with E-Commerce.

2. Literature Review And Hypothesis Development

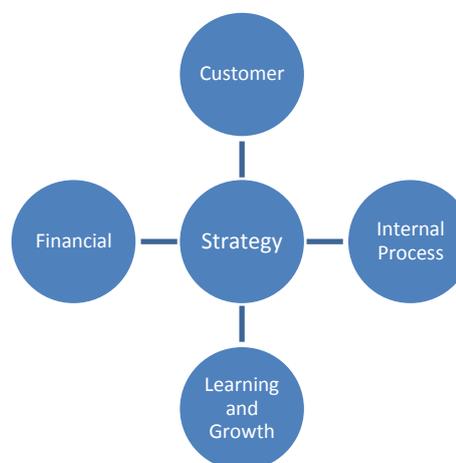
2.1 E-Commerce Performance

Business environment have been a competitive world which relied on specific advantages in order to advance the competitors. Organizations with the positive side of critical assets will have long-term advantages in doing business profitably by increasing their viability and competence (Barney, 1991; Wernerfelt, 1984). These critical resources will make sure that company will survive the competition if they can manage their competitive advantages. E-commerce have been critical point which not only act as supplement of sales channel, but also part of crucial competitive advantages in order to survive the agile environment. The acquisition of e-commerce companies can represent an advantage over competitors from home and abroad (Khan et al., 2016).

Creative companies that have updated the concept of e-commerce in an interesting branch of commerce. An appraisal tools of e-commerce need to assess thoroughly which not only covering the sales and technology perspectives, but also the aspect of overall business process which run the e-commerce system. These conditions generate needs of appraisal devices to evaluate the execution of the type of e-commerce they are performing. A company cannot be valued exclusively in monetary terms, but certainly non-financially, the balanced scorecard could be an instrument commonly used by management to grade the appropriateness of the company's execution and methodology. This means that the implementation of balanced scorecard has covered almost all aspect in the current business practices. Therefore, it has opened the possibility to implement the concept to assess company performance without type of industry limitation related with e-commerce. With this unique traits, there are needs to define the specific definition of balance scorecard. In terms of e-commerce, balanced scorecard

can be described as part of a device for evaluating the company's e-commerce performance.

Figure 1. Balanced Scorecard



Source: Kaplan & Norton (1992)

Achieving a suitable scorecard is based on four crucial questions, more specifically, how customers see business as an actor who changing their interface on screen. Their performance will be based on what things they are shown on screen which should exceed customer expectations, whether commercial actors can move forward and how characters are played on the screen which may reflect the interests of the actors (Kaplan & Norton, 1992). These questions are known as the four key elements of the Balanced Scorecard, namely Customer, Internal Process, Learning and Growth, and Finance. Therefore, e-commerce performance can be defined as the company's e-commerce-related performance as measured by the balance scorecard.

Balance scorecard for e-commerce may use the same four key dimension while measuring key specific indicators. Financial dimension may measure through Revenue Growth, Sales Growth, Inventory Turnover (Grigoroudis et al., 2012; Karabay & Kurumer, 2012). Internal Process dimension may measure through Returned Goods, Productivity, Employee Satisfaction (Grigoroudis et al., 2012; Karabay & Kurumer, 2012; Kefe, 2019). Customer dimension may measure through Customer Complaint, New Customer, Customer Waiting Time. Learning and Growth dimension may measure through Training Employee, New Technology Budget, Training Expenses (Grigoroudis et al., 2012; Karabay & Kurumer, 2012; Kefe, 2019).

2.2 E-Commerce Maturity

Creative industry in Indonesia can be considered as part of SMEs business since most of the entrepreneurs have SMEs scale of business in this type of industry. Those companies have been exposed with e-commerce as part of their business operation in order to gain competitive advantages. Nevertheless, challenges

related with e-commerce adoption and how to develop it still exist in current dynamic business environment.

Previous research has identified that in aspect of E-Commerce in the Indonesia SMEs area have been identified with the development level of E-Commerce adoption and the advantages of the E-Commerce field likewise demonstrates that the higher level organization development of E-Commerce reception will give higher advantages to the organization (Rahayu & Day, 2017). Hence, the higher the maturity level, the more prominent the advantages acquired. Nevertheless, we have not seen any impact towards company performance, especially their effect related with e-commerce.

This conditions additionally applies to the degree of E-Commerce appropriation on a business to business premise which delivers an upper hand in accordance with the degree of reception (Elbeltagi et al., 2016; Xuhua et al., 2019). As well as giving advantages as a rule, the development level of E-Commerce in certain business scale, such as SME organizations in Indonesia, may give several advantages towards organizations, including organization performance (Triandini et al., 2017). This finding may act as the bridge in order to assess whether development level of maturity will bring impact towards firm performance related with e-commerce. On this premise, it ought to be expected that E-Commerce Maturity affects Company Performance which may summarized as below:

H1: E-Commerce Maturity provide positive and significant towards company E-Commerce Performance.

E-commerce maturity may reflect two types of dimensions, which are e-commerce barrier and e-commerce benefit. E-commerce barrier may measure through Technology Barrier, Environment Barrier, and Organization Barrier (Morais et al., 2012). E-commerce benefit may measure through Information Speed, Product Review, Market Penetration (Triandini et al., 2017).

Creative Industry are in conditions that required the help and direction in order to nurture and heading to grow completely, to the extent financial and regulation. Nowadays, E-Commerce have been a basic part to foster business and improve in general business, including firm qualities as center of business. To accomplish basic development for E-Commerce, creative firms likewise need to assess their maturity levels. Organization's administration related with E-Commerce may depends upon their performance and business values. This paper will be examined and distinguish the relationship and effect in creative industry between E-Commerce Performance and E-Commerce Maturity, especially during the COVID-19 pandemic situation in Indonesia.

3. Methodology

3.1 Data Set

Data were gathered from different area of sub-industries around Java and Bali Island which may address as representative of the diverse enterprises which have been unique part of Creative Industry in Indonesia. Quantitative approach has been chosen and applied as part of examination approach which utilizing online surveys from randomly selected 383 entrepreneurs. These entrepreneurs have been grouped based on utilizing set of arbitrary inspecting technique through online host.

3.2 Method

Data which have been collected were measured by 6-point Likert scale with cross-sectional investigation approach. Gathered information were examined by utilizing SPSS software in order to quantify the passing value of KMO that need to be higher than 0.5. at the same time, Bartlett Test needs to be lower than 0.005, and Cronbach's Alpha with esteem more than 0.7 will demonstrate the unwavering quality of the respondent's data. Through the step of utilizing Confirmatory Factor Analysis through SPSS AMOS, Standardize Factor Loading were utilized to gauge the relationship for every point of view and their relations. On the off chance that there is frail relationship with result beneath 0.5, the things or points of view considered as powerless connection and will be disregarded. As such, we may accomplish ideal and pertinent model to answer the examination issues.

Descriptive result will be analyzed further to have better understanding related with the conditions of variable in Indonesia's Creative Business environment. Regression result will be analyzed as a proof whether the hypothesis will be accepted or rejected. If P-value is less than 0.05 and standardized regression weight are positive, then the hypothesis is accepted.

4. Results and discussion

4.1 Figures and tables

Indonesia level of e-commerce may consider as good environment for creative business to develop and practice their business process related with e-commerce. Variable of E-Commerce Performance (ECP) possessed by Indonesia Creative Firms considered as high value mean 57 and maximum value 72. On the other hand, variable of E-Commerce Maturity (ECM) also considered high value with mean 30 and maximum value 36. Furthermore, both variables may consider as normally distributed. Therefore, we may conclude that these respondents are sufficient to be representatives towards population.

Table 1. Variable Summary

Variable		ECM	ECP
Mean		29.96	57.44
95% Confidence Interval for Mean	Lower Bound	29.59	56.80
	Upper Bound	30.32	58.07
5% Trimmed Mean		30.08	57.53
Median		30.00	58.00
Variance		13.043	39.786
Std. Deviation		3.611	6.308
Minimum		12	39
Maximum		36	72
Range		24	33
Interquartile Range		6	10
Skewness		-0.663	-0.183
Kurtosis		0.906	-0.724

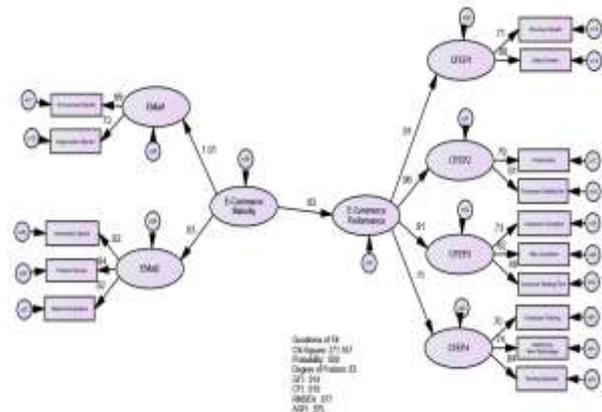
There were no proof of significant association between firm age and variables used in this research. Therefore, there will be no significant differences despite how long the companies has have been operated. We may take out the assumptions where the longer firm doing business, the more mature or have higher performance in terms of e-commerce.

There were several dimensions which have been excluded from this research due to low value of relation towards their variable. Firstly, technology barrier which part of E-Commerce Maturity variable were taken out. Technology Barrier were excluded which may interpreted as there was no or minimum technology related issues that may hinder the maturity of e-commerce. This finding may differ from previous research (Morais et al., 2012) since every respondent in this research have been utilizing e-commerce as one of their main sales channels, which also mean that no technology barrier to implement e-commerce as part of their business process.

Inventory Turnover and Product Return from E-Commerce Performance variable was removed due to low relationship value (SFL below 0.5). These findings may imply that in Indonesia creative business environment, there were no technology barrier existed and no significant impact towards inventory related issue as part of e-commerce performance. Inventory turnover and product return may not become relevant in terms of creative business in Indonesia due to scale of business which part of the SMEs that have less focus on returned goods or details of stock level, especially on e-commerce environment in Indonesia which focus more on generating customer and maintain financial

performance compared with inventory managements process.

Figure 2. SEM Model



The model has achieved good fit of model with result of 271.167 chi square, reach 0.914 GFI, make 0.919 CFI, and achieve acceptable fit of 0.077 RMSEA with degree of freedom 83. This indication may reflect that the model is sufficient for further analysis through statistical regression.

Table 2. Regression Summary

Relation	Regression Weight	Std Regression Weight	P-Value
ECM→ECP	0.578	0.628	***

E-Commerce Maturity give positive and significant impact (p-value<0.000) towards E-Commerce Performance. These finding may interpret that every effort of entrepreneurs towards creative firm’s maturity level of e-commerce may resulting improvement towards overall company performance which have relation with e-commerce. It also shown that e-commerce maturity may measure whether creative companies have passed their barrier and receive its benefits or not. A company may categorize as mature in terms of e-commerce when they have surpassed its barrier and receive benefits related with e-commerce. Subsequently, E-Commerce Maturity brought positive effect towards variable E-Commerce Performance with impact 0.628 improvement. Hence, we may conclude that H1 is accepted with creative firm E-Commerce Performance may drive by firm’s Maturity related with e-commerce.

Creative industry has been unique type of business which may require different approach with other stream of business. In this sector, every investment given by entrepreneurs in order to develop their company’s level of e-commerce maturity deems to be worth of spending and may become competitive advantages that drive the

firm into successful performance. These findings means that creative firm experienced improving state of e-commerce performance when increased maturity level related with e-commerce achieved. During COVID-19 pandemic which require creative industry entrepreneurs to heavily utilize the platform of e-commerce, this research may help creative firm to survive and enhance their business performance.

5. Conclusion

Pandemic related with COVID-19 have brought new disruption towards business approach, especially for creative firms in Indonesia. E-Commerce have become vital elements to improve firm performance. Creative firms which have invested more resource to develop their E-Commerce Maturity may benefit from the positive impact towards their performance for E-Commerce.

This research has experienced a few drawbacks. Despite the fact that broad work during information assortment and build approval stages have been done, the potential for respondents' predisposition in insight can't be excluded. Even though that the result has shown positive improvement towards Indonesia creative business, further examination and data testing might need to be done on various sorts of enterprises and expand the degree for global exposure.

Acknowledgments

We would like to express our gratitude towards directorate of resources, directorate general of higher education, the ministry of education, culture, research, and technology in accordance with the research contract for the 2021 fiscal year number: 3530/LL3/KR/2021 dated 12 July2021 which granted fund for this research.

References

- [1]. Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- [2]. Elbeltagi, I., Hamad, H., Moizer, J., & Abou-Shouk, M. A. (2016). Levels of business to business e-commerce adoption and competitive advantage in small and medium-sized enterprises: A comparison study between Egypt and the United States. *Journal of Global Information Technology Management*. <https://doi.org/10.1080/1097198X.2016.1134169>
- [3]. Eremina, Y., Lace, N., & Bistrova, J. (2019). Digital maturity and corporate performance: The case of the Baltic states. *Journal of Open Innovation: Technology, Market, and Complexity*, 5(3). <https://doi.org/10.3390/joitmc5030054>
- [4]. Grigoroudis, E., Orfanoudaki, E., & Zopounidis, C. (2012). Strategic performance measurement in a healthcare organisation: A multiple criteria approach based on balanced scorecard. *Omega*, 40(1), 104–119. <https://doi.org/10.1016/j.omega.2011.04.001>
- [5]. Ji-fan Ren, S., Fosso Wamba, S., Akter, S., Dubey, R., & Childe, S. J. (2017). Modelling quality dynamics, business value and firm performance in a big data analytics environment. *International Journal of Production Research*. <https://doi.org/10.1080/00207543.2016.1154209>
- [6]. Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard--measures that drive performance. *Harvard Business Review*, 70(1), 71–79.
- [7]. Karabay, G., & Kurumer, G. (2012). Managing through strategic performance management in apparel companies. *Fibres and Textiles in Eastern Europe*.
- [8]. Kefe, I. (2019). The determination of performance measures by using a balanced scorecard framework. *Foundations of Management*. <https://doi.org/10.2478/fman-2019-0004>
- [9]. Khan, M. A. I., Ahmaruddin, M., Mohammed, S., & Azharuddin, S. (2016). Ecommerce for entrepreneurs: Boon or bane. *International Journal of Applied Business and Economic Research*.
- [10]. Morais, E. P., Pires, J. A., & Gonçalves, R. M. (2012). E-Business Maturity: Constraints Associated With Their Evolution. *Journal of Organizational Computing and Electronic Commerce*, 22(3), 280–300. <https://doi.org/10.1080/10919392.2012.696952>
- [11]. Rahayu, R., & Day, J. (2017). E-commerce adoption by SMEs in developing countries: evidence from Indonesia. *Eurasian Business Review*. <https://doi.org/10.1007/s40821-016-0044-6>
- [12]. Singh, P., Dilip, D., Wen, G. K., Mui, D., Kee, H., Yee, G. S., Ying, C., Ling, F. K., Shammias, M., & Tandra, G. R. (2021). The Impact of AirAsia 's E-Commerce Websites on Its Consumer Buying Behavior. *International Journal of Tourism and Hospitality in Asia Pasific*, 4(1), 34–42.
- [13]. Triandini, E., Djunaidy, A., & Siahaan, D. (2017). A maturity model for e-commerce adoption by small and medium enterprises in Indonesia. *Journal of Electronic Commerce in Organizations*, 15(1), 44–58. <https://doi.org/10.4018/JECO.2017010103>
- [14]. Turban, E., Outland, J., King, D., Lee, J. K., Liang, T.-P., & Turban, D. C. (2018). *Social Commerce: Foundations, Social Marketing, and Advertising*. https://doi.org/10.1007/978-3-319-58715-8_8
- [15]. Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*. <https://doi.org/10.1002/smj.4250050207>
- [16]. Wigand, R. T. (1997). Electronic commerce: Definition, theory, and context. *Information Society*, 13(1), 1–16. <https://doi.org/10.1080/019722497129241>
- [17]. Xuhua, H., Elikem, O. C., Akaba, S., & Brown, D. W. (2019). Effects of business-to-business e-commerce adoption on competitive advantage of small and medium-sized manufacturing enterprises. *Economics and Sociology*.

- <https://doi.org/10.14254/2071-789X.2019/12-1/4>
- [18]. Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of e-business by organizations: Cross-country evidence from the retail industry. *Information Systems Research*, 16(1), 61–84. <https://doi.org/10.1287/isre.1050.0045>