

E-commerce Platform Performance, Digital Marketing and Supply Chain Capabilities

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ARTICLE INFO	ABSTRACT
<p>Keywords: E-commerce; Digital Marketing, Supply Chain Capability, E-commerce Performance, Customer Review Rating</p> <p>Kata Kunci: E-dagang, Pemasaran Digital, Kapabilitas Rantai Pasok, Kinerja e-dagang, Penilaian Tinjauan Konsumen</p> <p>Corresponding author: anna_amalyah@sbm-itb.ac.id</p>	<p>ABSTRACT</p> <p>By using Indonesian case studies, this research plan to fill the research gap in the theories of transaction cost economics, multi-attribute utility theory, agency theory and information-processing theory, through variable based modeling. For business and industry stakeholder point of view, this research is expected to be useful for Indonesian e-commerce platform ecosystem stakeholders especially regulators, to give insights towards dynamics within e-commerce platform ecosystem. This paper originality lies on proposing e-commerce conceptual model by using multidisciplinary approach through combining four main constructs, which consists of relative e-commerce platform performance, digital promotion capability, customer experience review rating and supply chain capabilities. The model also accommodates seasonal pricing and logistic outsourcing as intervening variables to examine model sensitivity. With sample size of 1288 people who have purchased items in at least two e-commerce platform, collected data is processed using Structural Equation Modeling (SEM) method by LISREL software.</p> <p>SARI PATI</p> <p><i>Dengan menggunakan studi kasus Indonesia, penelitian ini diharapkan dapat mengisi celah penelitian dalam teori biaya transaksi ekonomi, teori kepuasan multi-atribut, teori Agensi dan teori pengolahan informasi, dengan menggunakan permodelan berbasis variabel. Pada sisi pemangku kepentingan bisnis dan industri, penelitian ini diharapkan dapat bermanfaat bagi berbagai pemangku kepentingan terutama regulator, dalam kerangka memberikan masukan terhadap dinamika ekosistem platform e-dagang. Originalitas dari penelitian ini adalah mengajukan model konseptual dari e-dagang dengan menggunakan pendekatan multidisiplin dengan 4 konstruk utama yakni, 1) kinerja platform e-dagang, 2) kapabilitas promosi digital, 3) penilaian tinjauan pengalaman konsumen dan 4) kapabilitas rantai pasok. Model Penelitian juga mengakomodasi strategi harga musiman dan alih daya logistik sebagai variabel intervensi dalam kerangka menelaah sensitivitas model. Dengan jumlah sampel 1288 responden,</i></p>

yang setidaknya pernah berbelanja di dua platform e-dagang, data yang diperoleh dari sampel diolah melalui permodelan persamaan struktural dengan piranti lunak LISREL.

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INTRODUCTION

E-commerce has changed the faces of many industries trading activities process that influenced and/or supported by technology. As part of digital economy, e-commerce platform has become apparent not only in developed nations but also developing nations. (Hsiao & Chen, 2013) found that the largest variation channels strategies to cope with e-commerce development was mainly the result from the manufacturers' competitive strategies. Channel substitution may in fact boost the manufacturer's incentive to adopt the dual channel strategy to win the market by closer proximity to consumers.

(Hortaçsu & Syverson, 2015) had created projection when e-commerce taken the share of classic brick-mortar retailer in USA. The projections were expected to reveal which business sectors/ industries that are affected by e-commerce as well as when (in year) the business model will be dominated by e-commerce business model. Retailer share in the form of e-commerce in 2016 for the music and video product category has already reached 90%, while in 2015 the share of book and magazine has reached 50%. In 2017, categories such as computer hardware and software, toys, hobbies and game, electronics and appliances has reached 50%.

(Picot-Coupey, Huré & Piveteau, 2016) found two interesting facts through their research focusing on type of e-commerce channel and its evolution. The first result shows that the challenges faced in shifting to omni-channel strategy are so numerous and so engaging that it is impossible to evolve directly from

a multi-channel. Second, throughout e-commerce channel transformative process, the challenges faced by the company evolved gradually in terms of scope and priority and can be categorized into two main categories: the strategy-related challenges (consists of organizational, cultural, managerial, marketing and resources issue) and the development related challenge (consist of retailing mix, information systems and customer relationship management).

By using different point of view, (Hanninen, Smedlund & Mitronen, 2018) provided an overview of how multi-sided e-commerce digital platforms are changing the industry game and assess the implications and impact of these platform-based businesses on the retail sectors. The four example of e-commerce platforms that being analyzed were Alibaba, Amazon, e-bay and Rakuten. The examples have demonstrated transformation within transaction logic of retailing as they intermediate transactions between buyers and suppliers rather than handling the entire supply and logistics chain themselves. Another important findings are how the role of consumer understanding and big data analytics optimization explained how multi-sided digital platforms differentiate from their non-platform competitors.

Because of hypothetical believe that e-commerce practice in developing countries should be different compare to leading developed nations, (Boateng, Hinson, Heeks & Molla, 2008) tried to find facts on e-commerce in developing countries. (Boateng, et al, 2008) found that there were limited discussions toward e-commerce in developing countries

context based on academic articles review. Beside that, as (Boateng, et al, 2008) found that there were also lack of e-commerce literature diversity, which mainly focused on potential firm-level opportunities and benefits, compared with the contribution of e-commerce to development and how it could be achieved.

Indonesia is recently considered as one of the biggest e-commerce markets in Asia from the context of its e-commerce retail growth trend. With increasing GDP per capita and smartphone penetration and internet affordability, Indonesia had created a huge e-commerce market potential. According to TechnAsia (as one of the leading publications of technology publication) 2016, with smartphone penetration reaching more than 100 million units, Indonesia having favorable period of home of growing e-commerce sector.

By 2020, according to Group M presentation 2017, Indonesia digital economy size is projected to reach US\$130 Million, and making Indonesia the 3rd largest e-commerce market behind China and India. In 2025, Southeast Asia's digital economy (which include e-commerce, online games, and online advertising) will surge to USD \$200 billion. Indonesia forecasted to have account for 40.5% or USD \$81 billion of its total market region, and half of it come from Indonesian e-commerce.

In regards of digital economy projection, TechnAsia 2016 predicts that e-commerce in Indonesia could grow more than tenfold just within 10 years. On-line travel which current size is bigger that e-commerce is predicted to grow 5 times in 10 years. Meanwhile smaller size category of digital economy like on-line rides and digital ads, also predicted will have strong growth in the next 10 years. Therefore, Indonesia is becoming one of prominent market of e-commerce due to its large customer based, internet penetration and not to mention almost 60% of Indonesian economy rely on consumer spending which much higher compare to government expenditure, investment and net-export.

However, based on initial data finding through expert interview, specific/operational level regulation toward e-commerce has not been addressed, due to different flavor of "market openness" within actors. Moreover, according to Indonesia Ministry of communication and informatics 2016, the roadmap only expressing that e-commerce regulation will be applied for three type of business segments: small-medium enterprise, established e-commerce business entities and technology-based start-up companies.

Until the 3rd quarter of 2018, specific regulation regarding on e-commerce which supposed to be done in 2017 based on Indonesia e-commerce roadmap, from tax related into managing actors within e-commerce industry, has not yet formed and issued. Therefore, clear direction and industry "orchestration" has not yet been clear enough to all the players and actors which include producers and retailers. This condition could lead to unhealthy business conducts which could harming Indonesia e-commerce industry be sustainability in the future.

On the scholarly research area, research on e-commerce topics are rising in the last decade. Growing from the context of website store, omnichannel retail then to pure e-commerce platform by (Picot-Coupey, Huré & Piveteau, 2016), (Hanninen, Smedlund & Mitronen, 2018) and (Greve & Song, 2017). The topics also came from several knowledge domain/focus from supply chain by (Molla & Heels, 2007), (Joong-Kun Cho, Ozmet & Sink, 2008), (Hsion, Chen & Liao, 2017), Information Technology by (Cegielski, Allison Jones-Farmer, Wu & Hazen, 2002), consumers, and marketing point of view by (Luo, Ba & Zhang, 2012) and (Wong, Tan, Tan & Ooi, 2015). Supply chain domain have more emphasize on how the flow of goods, information and money within e-commerce transactions. Meanwhile IT domain have more emphasize on consumer big data and how to create system that make the consumer loyal visiting the e-commerce platform/online store.

In regards of research methods, majority of e-commerce research are still in literature review and conceptual frameworks with classic quantitative research approach, such as using simple correlation and regression analysis. Some researchers are also employing qualitative approach, including in-depth interview and focus-group discussion. There are still limitation of employing more sophisticated analytical tools like structural equation modelling within e-commerce research publications. This probably because e-commerce related researches are considered as rather new studies. In regards of not so many literature using Structural Equation Method, since SEM is born from social science/marketing research that require a lot of variables and measurement, meanwhile research in e-commerce also come from information system and supply chain/logistics which SEM is not quite popular research tools.

Most discussion toward e-commerce platform in business or management context is consumer conversion rate. The main questions are how, into what extent and how much the effectiveness of e-commerce platform in increasing consumer conversion rate compare to the traditional brick and mortar stores and their distribution channel. However, E-commerce platform could not run by stand alone mode. Companies behind the e-commerce platform require to possess not only supply chain system but also supply chain capability in order to support the transactions, productions, services and distributions of e-commerce platform.

Since e-commerce using digital platform media, how e-commerce platforms (and companies behind) ways in attracting the customers are different compare to brick and mortar retailer through traditional media like TV, Radio and newspapers. Digital marketing capacities and strategies create the difference between the winner and the mediocre on how to increase website consumer traffic. Meanwhile, consumer traffic will lead to transactions through funnelling framework. Seasonal pricing strategy in e-commerce platform

becoming one of digital promotion strategy to attract consumer traffic within the platform. Promotions through discounts and seasons-sale program could attract consumer to visit e-commerce platform.

This research is focusing on e-commerce platform consumer conversion rate, especially understanding the behavioral aspects on each member specifically on pricing strategy, supply chain capability, digital marketing campaign, while also analyzing the interactions among actors within e-commerce platform. This research is using Indonesian context, an emerging economy that have huge potential e-commerce market, but still in early phase and limited regulation on e-commerce. First, the standard of consumer journey of deciding what products/service they will consume. Second, how producers and traders cater and provide the consumer needs and wants. Third, how the digital ecosystem also influenced the consumer point of view toward product. Last but not least, being in digital platform make pricing become more transparent to consumers and pricing strategy become one of important factors to attract consumer in e-commerce transactions.

THE COMPREHENSIVE THEORETICAL BASIS

This research cover four major constructs related on e-commerce, which include consumer conversion rate, pricing, digital marketing communication and supply chain capability. To capture e-commerce platform and ecosystem, there are four main theories that being analysed with high relevancies for the research construct. The theories are, Transaction cost Economics (TCE) Theory, Agency Theory, Information Processing Theory and Multi-attribute theory.

1. Transaction-cost Economics (TCE) Theory

Transaction-cost Economics (TCE) is central theory in the field of strategy. The main question of TCE is why firms exist in the first place, how firm define their boundaries and how they ought to govern operations. (Williamson, 2009) explained that TCE derived from pragmatic views of business practice

which include keep it simple, get it right, make it plausible, prediction and empirical testing.

2. Agency Theory

Agency theory is a supposition that explains the relationship between principals and agents in business. The theory is relevant for the situations where one party (the principal) delegates authority in terms of control and decision making about uncertain task – to another party or the agent (Fayezi, O'loughlin & Zutshi, 2012)

3. Information Processing Theory

Information processing theory is based on the idea that humans process the information they receive, rather than responding to stimuli. Information processing theory consists of three elements, information processing requirement, information processing, capabilities and finally, the fit between requirements and capabilities.

4. Multi-Attribute Utility Theory (MAUT)

The attribute-based or multi-attribute theory is often used to analyse the influences over consumer decision making. The theory suggests that each choice alternative is constructed from several attributes. The consumer then evaluates the attributes of each alternative and assumes an overall utility, depending only on a subjective value of the alternative. The consumer then needs to use the ability to calculate which alternative maximize the value. The highest scoring alternative, the one with the highest utility function will then be purchased, (Sirkeci & Magnúsdóttir, 2011).

5. E-commerce Consumer Conversion Rate

Conversion rate is defined as the ratio of transaction to traffic. In electronic commerce, conversion marketing is the phrase used to describe the act of converting a customer who browses website into a paying consumer. Conversion marketing is measured by conversion rate – the percentage of visitors who take the desired action.

(Benera, 2011) explains that the items which mostly

affect the desire to purchase are: the width of the set being compared to traditional stores, security of payment, the convenience of price, the cost of shipping, the preference of the specific site in relation to others and the frequency of purchase made online. Meanwhile the constructs that affect the intention to purchase are: playfulness, e-trust and perceived usefulness.

6. E-commerce Digital Promotion Capability

By using data 58 countries sampling t-test, (Gong,2009) explain that high context and polychronic culture are more conducive to the adoption and diffusion of internet retailing and there is significant positive impact of uncertainty avoidance on B2C ecommerce adoption. The conclusion is based on (Gong,2009) three hypothesis as follow. First hypothesis is the adoption rate of B2C e-commerce in countries with high context culture is faster than that in countries with low context culture. Monochronic (northern European & Americans – prefer to do things in a structured and linear manner) cultures emphasize schedules and promptness, polychronic cultures (Latin America & middle east – tend laid-back, less concerned about how long a process takes and tend to entertain multiple demands and handle several tasks simultaneously) stresses involvement of people and are result oriented instead of adhering to the present time scheme. Second hypothesis is the adoption rate of B2C e-commerce in countries with polychronic culture is faster than that in countries with monochronic culture. According to (Hofstede, 1980), the collectivism/individualism dimension is closely tied to the high context dimension. Third hypothesis is the uncertainty avoidance will be negatively associated with the adoption rate of e-commerce. It could be inferred that different marketing communication strategies should be conducts both for consumers in Monochronic countries as well as consumer in polychronic countries.

7. E-commerce Supply Chain Capability

Logistics capabilities relates with 1) Activities managed under the logistics umbrella provide an

area of unique organizational skills and process that can provide the firm competitive advantage, or; 2) managing activities of the logistics functional area to provide sustainable competitive advantage. Dimension of this capability include process capabilities and value-added service (Defee & Fugate, 2010).

(Joong-Kun Cho, Ozmet & Sink, 2008) highlighting the effective and efficient supply chain management is critical to the success of firms engaging in e-commerce. The research examines the impact of logistics capability and logistics outsourcing on firm performance in an e-commerce market environment. Therefore, according (Joong-Kun Cho, Ozmet & Sink, 2008) aspects that stay the most relevant for firm performance is the logistic capability. It could be explained that company superior logistic capability will keep on fulfilling customers interests/needs as well as have closer relationship with customers, something that could not be delivered by logistics outsourcing, that has lower service culture/mentality. (Joong-Kun Cho, Ozmet & Sink, 2008) findings is contrary with (Yu, Wang, Zhong & Huang, 2017) which emphasize on the importance of outsourcing for e-commerce for lower cost and/or increasing profitability.

8. E-commerce Seasonal Pricing

Pricing Strategies could be formed by switching cost philosophy to opportunistic approach from corporation. (Yen, 2010) evaluate how perceived risk affect the relationship of switching costs and customer loyalty in commerce. Findings show that switching costs positively influence customer loyalty. In addition, perceived risks will affect the relationship of switching costs and customer loyalty. For customers with low perceived risks, switching costs are also positively associated with customer loyalty. However, for customers with high perceived risks, the relationship of switching costs and customer loyalty is weak or negative (425 online shopping customers in USA).

METHODS

This research will follow the “positivism” philosophy

and using descriptive instead of normative to evaluate certain condition. Data collection will be conducted through literature review and survey questionnaire to increase validity and reliability of the questionnaire.

Steps that will be taken in this research are consists of : 1) questionnaire development from literature review, 2) in depth interview through cognitive interviewing , 3) adjustment of the questionnaire based on in depth interview analysis, 4) pilot testing, 5) reliability testing by Cronbach alpha & validity/consistency testing by KMO analysis, 6) questionnaire gathering, 7) data analysis from survey.

Data will be gathered through combination of cluster, stratified through snowballing sample, in order to get satisfying number of respondents. Category of industry will adapt Hortaçsu & Syverson (2015) classification, consists of : Clothing & accessories; Toys, hobbies & games; Computer, hardware, software, Handphone & Electronic appliances; Personal health & beauty; Furniture; Office equipment & supplies.

For Data analysis process will use LISREL software program for Structural Equation Modelling. Since LISREL is using language programming, it is easier to control the mistakes/errors compare to other software for structural equation modelling. Proposed research model for variable based modelling is using structured equation modelling adapting Bakker, Zeng, Knieght & Herland (2008) and Karjaluoto, Mustonen & Ulkuniemi (2015) which presented in figure 1. This research is seeking to understand determining factor of consumer conversion rate which proxied by sales performance. Based on previous research digital communication, supply chain capability, pricing strategy and e-commerce platform capability could affect the consumer conversion rate.

Based on variable modelling conceptual framework (Figure 1), research proposition are as follow:

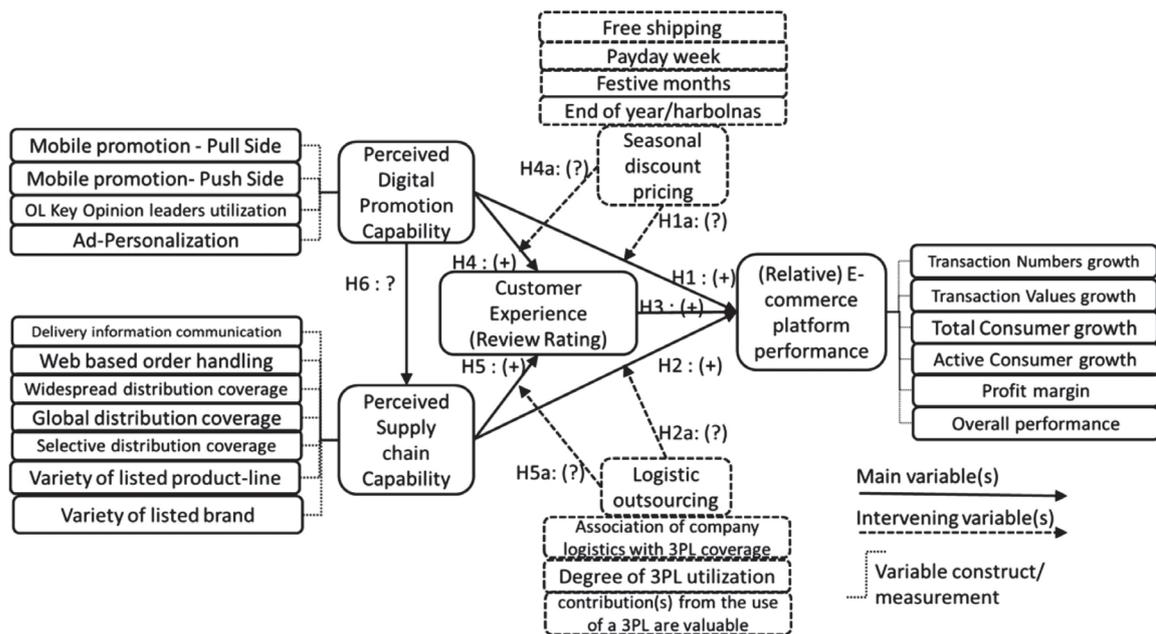


Figure 1. Conceptual framework – variable based modelling

Based on (Karjaluoto & Mustonen, 2015) emphasize on how Digital marketing channel improve the company performance, combined with Zhou, Sun, Ma, and Chen (2018), which put Internet trading platforms make it possible to trade online in real time between suppliers and customers who live in different geographical areas. (Karjaluoto & Mustonen, 2015) & (Zhou et al., 2018) approach will contribute to Information processing theory, especially on how digital marketing process from affected the consumer decision making purchasing process. The approach also enriches transaction cost economics theory How pricing strategy affected consumer decision making and purchasing process

We could derive hypotheses below in order to complete the study of how to price online to maximize the total revenue as well as to optimally price two different qualities based on information processing and transaction cost theory.

H1: *Perceived digital promotion capability has positive correlation with (relative) e-commerce platform performance*

H1a: *Seasonal discount pricing has intervening effect on relationship between perceived digital promotion and (relative) e-commerce platform performance*

(Bakker, Zheng, Knight, and Harland, 2008) explain that supply chain capabilities within e-commerce platform related with internal readiness vs external pressure of e-commerce supply chain. It is related with (Pentina and Hasty, 2009) findings indicate that a higher degree of inter-channel coordination increases retailers' online sales. Meanwhile, In regards of operations aspects of e-commerce platform, according to (Yu, Wang, Zhong, and Huang, 2017) find that third-party logistics (3PL) service providers have been increasing the investments in expanding their capacities and major E-commerce players have invested heavily in creating their own logistics facilities like Distribution Channel (DC).

In the other hand, according (Cho et al., 2018) aspects that stay the most relevant for firm performance is the logistic capability. It could be explained that company superior logistic capability will keep on fulfilling customers interests/needs as well as have

closer relationship with customers, something that could not be delivered by logistics outsourcing, that has lower service culture/mentality. (Cho et al., 2018) findings is contrary with (Yu et al., 2016) which emphasize on the importance of outsourcing for e-commerce for lower cost and/or increasing profitability.

These different approaches will contribute to Agency Theory, especially on how E-commerce supply chain capability affected consumer decision making and purchasing process, which will derived through these hypothesis below:

H2: *Perceived supply chain capabilities have positive correlation with e-commerce platform capability*

H2a: *Logistics outsourcing has intervening effect on relationship between perceived logistics capability and (relative) e-commerce platform performance*

(Gudigantala, Bicen, and Eom, 2016) conducted e-commerce systemized literature review to theorize from the perspective of e-commerce firms (not individual consumers) on the conversion rates, purchase intention and website satisfaction. Based on the model, that for an average e-tailer, (Gudigantala, Bicen, and Eom, 2016) also explain that one unit increase in website satisfaction score is expected to increase average monthly revenue by \$14.26 million.

Meanwhile, (Yu et al., 2016) classify that there are two main E-commerce Logistic model: First, Self-support model, that perform better in controlling and executing strategy, but has higher costs consequences. Second, Outsourcing model is also a quite important model in E-commerce logistics, which has lower cost but in the other hand lower control of business operation.

(Gudigantala et al., 2016) approach that used within this study will contribute to multi Attribute

utility theory especially on how consumer decision making process journey in e-commerce platform. This study will also contribute to Information processing theory especially on how digital marketing process from affected the consumer decision making purchasing process, which will derived into this hypothesis below

H3: *Customer experience (review rating) has positive correlation with (relative) e-commerce platform performance*

(Gong, 2009) explains that high context and polychronic culture are more conducive to true adoption and diffusion of internet retailing and there is significant positive impact of uncertainty avoidance on B2C ecommerce adoption. It is inferred that different marketing communication strategies should be conducts both for consumers in Monochronic countries as well as consumer in polychronic countries.

Meanwhile (Ghosh & Shrivastava, 2017) through their research on online purchasing tickets, mention that there are 7 motivation factors that affect consumers online purchase intention and motivate them to buy online : pragmatic motivation (convenience), product motivation (product availability), economic motivation (competitive pricing), service excellence motivation (value based perception), demographic motivation (demographic parameter), social motivation (supportive social environment, perceived norms, family-friend influence) and situational motivation (time pressure, lack of mobility, geographical distance need for special items).

These two different approaches will contribute to multi Attribute utility theory especially on how consumer decision making process journey in e-commerce platform, as well as Information processing theory on How digital marketing process from affected the consumer decision making purchasing process, through these hypothesis below :

H4: *Perceived digital promotion capability has positive correlation with Customer experience (review rating)*

H4a: *Seasonal discount pricing has intervening effect on relationship between perceived digital promotion and Customer experience (review rating)*

(Hartmann and Herb, 2014) conceptually demonstrate how social capital between service buyer and partner firm in a service triad impacts the service buyer’s opportunism risk regarding the service provider’s behavior. Based on literature, the authors show how social capital between service buyer and partner firm decreases the service buyer’s opportunism risk regarding the provider’s behavior.

Meanwhile, (Yu et al., 2016) classify that there are two main E-commerce Logistic model: First, Self-support model, that perform better in controlling and executing strategy, but has higher costs consequences. Second, Outsourcing model is also a quite important model in E-commerce logistics, which has lower cost but in the other hand lower control of business operation.

The triad impact by (Hartmann and Herb, 2014) approaches will contribute to multi Attribute utility theory especially on how consumer decision making process journey in e-commerce platform, as well as Information processing theory on How digital marketing process from affected the

consumer decision making purchasing process, which derived through these hypothesis below :

H5: *Perceived supply chain capability has positive correlation with Customer experience (review rating)*

H5a: *Logistics outsourcing has intervening effect on relationship between perceived logistics capability and Customer experience (review rating)*

H6: *Perceived digital promotion capability has unknown correlation with Perceived supply chain capability*

RESULTS AND DISCUSSION

Data from 1288 respondents were collected on October-December 2019. As shown in Table 1, the majority of respondents were Gen Z (aged 17-22 years) and Late Millennial (aged 23-29 years) with a proportion of 41% and 39% respectively.

In terms of gender, the majority of respondents in this study were women, with a proportion of 68% or 882 respondents. Respondents were Indonesian which residence ranging from all over Indonesia. Mostly they were lived in Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi) with percentage of 26% or 335 respondents.

The survey data of each respondents were divided into their top three preferences of e-commerce platform. Respondents were required to have an

Tabel 1. Respondents Profile

Profile	Frequency	%
Gender	Male	32
	Female	68
Age Cohort	Baby Boomers	1
	Gen X	5
	Gen Z	41
	Late Millennial	39
	Early Millennial	10
	Xennials	4

experience at least on two e-commerce platform from top 20 Indonesia e-commerce leader (Tokopedia, Shopee, Bukalapak, Lazada, Blibli, Orami, JDID, Bhinneka, Blanja, Zalora, Sociolla, Ilotte, Elevenia, Laku6, Aliexpress, Ralali, Fabelio, Jakarta Notebook, Shopie Paris, Alfacart). Collected data from the first and second preferences of e-commerce platform are in the amount of 1288 respondents. While respondents who had third preference of e-commerce platform are 453 respondents. The most chosen e-commerce platform in the first preference of the respondent's mind is Shopee, with percentage of 60%. The most chosen one in the second preference is Tokopedia, with percentage of 28%. Next, the most chosen one in the third preference is Lazada, with percentage of 22%.

The goodness of fit measurement model output from the 1288 collected data from the first to third e-commerce platform preference are has a level of compatibility ranging from marginal to good fit (Wijanto, 2008). So it is concluded that the measurement model in this study is acceptable because of the compatibility of the overall model.

The questionnaire indicators are taken from previous research, which are: Digital Promotion Capability (Kim, Kim, Choi & Trivedi, 2017), (Aslam & Karjaluto, 2017); Supply Chain Capability (Joong-Kun Cho, Ozmet & Sink, 2008); Customer Review Rating (Joong-Kun Cho, Ozmet & Sink, 2008), (Kim & Han, 2014); Relative E-commerce Platform Performance (Joong-Kun Cho, Ozmet & Sink, 2008); Logistic Outsourcing (Joong-Kun Cho, Ozmet & Sink, 2008); Seasonal Pricing, (Bower & Maxham, 2012).

Indicators used by researchers to evaluate reliability is composite reliability (CR). As for validity, factor to be considered is the standardized loading factor (SLF). For validity analysis, what will be seen is the SLF with the value ≥ 0.4 . As for reliability, what will be seen is the CR values ≥ 0.6 . There are two indicator's output of SLF with the value ≤ 0.4 (CR4 & CR5), therefore this indicator is deleted. Other than that, the output of the SLF from each of indicators in this research have reached ≥ 0.4 , and CR value have also reached ≥ 0.6 as shown in the Table II-IV, so the construct can be declared as valid and reliable.

Tabel 2. Output of measurement model e-commerce platform 1

Variable	Item	SLF	Item	SLF	CR
Perceived Digital Promotion Capability	DCP1	0.78	DCP5	0.57	0.90
	DCP2	0.79	DCP6	0.57	
	DCP3	0.79	DCP7	0.75	
	DCP4	0.74	DCP8	0.77	
Perceived Supply Chain Capability	SCC1	0.78	SCC5	0.68	0.91
	SCC2	0.82	SCC6	0.79	
	SCC3	0.85	SCC7	0.76	
	SCC4	0.77			
Customer Experience (Review Rating)	CRR1	0.83	CRR3	0.81	0.87
	CRR2	0.85			
(Relative) E-Commerce Platform Performance	REP1	0.66	REP4	0.81	0.89
	REP2	0.69	REP5	0.78	
	REP3	0.81	REP6	0.82	
Logistics Outsourcing	LO1	0.84	LO3	0.83	0.86
	LO2	0.78			
Seasonal Discount Pricing	SP1	0.74	SP5	0.92	0.95
	SP2	0.76	SP6	0.93	
	SP3	0.83	SP7	0.84	
	SP4	0.84	SP8	0.85	

Tabel 3. Output of measurement model e-commerce platform 2

Variable	Item	SLF	Item	SLF	CR
Perceived Digital Promotion Capability	DCP1	0.83	DCP5	0.74	0.94
	DCP2	0.82	DCP6	0.74	
	DCP3	0.87	DCP7	0.78	
	DCP4	0.86	DCP8	0.78	
Perceived Supply Chain Capability	SCC1	0.79	SCC5	0.80	0.93
	SCC2	0.81	SCC6	0.77	
	SCC3	0.86	SCC7	0.77	
	SCC4	0.80			
Customer Experience (Review Rating)	CRR1	0.87	CRR3	0.88	0.91
	CRR2	0.89			
(Relative) E-Commerce Platform Performance	REP1	0.75	REP4	0.91	0.93
	REP2	0.75	REP5	0.86	
	REP3	0,90	REP6	0,84	
Logistics Outsourcing	LO1	0.88	LO3	0.87	0.90
	LO2	0.84			
Seasonal Discount Pricing	SP1	0.78	SP5	0.92	0.96
	SP2	0.79	SP6	0.92	
	SP3	0.89	SP7	0.87	
	SP4	0.89	SP8	0.87	

Tabel 4. Output of measurement model e-commerce platform 3

Variable	Item	SLF	Item	SLF	CR
Perceived Digital Promotion Capability	DCP1	0.86	DCP5	0.68	0.93
	DCP2	0.85	DCP6	0.71	
	DCP3	0.90	DCP7	0.76	
	DCP4	0.83	DCP8	0.75	
Perceived Supply Chain Capability	SCC1	0.76	SCC5	0.85	0.93
	SCC2	0.81	SCC6	0.76	
	SCC3	0.90	SCC7	0.75	
	SCC4	0.82			
Customer Experience (Review Rating)	CRR1	0.91	CRR3	0.88	0.93
	CRR2	0.90			
(Relative) E-Commerce Platform Performance	REP1	0.79	REP4	0.92	0.94
	REP2	0.77	REP5	0.86	
	REP3	0,92	REP6	0,89	
Logistics Outsourcing	LO1	0.84	LO3	0.88	0.88
	LO2	0.80			
Seasonal Discount Pricing	SP1	0.81	SP5	0.95	0.97
	SP2	0.82	SP6	0.95	
	SP3	0.92	SP7	0.87	
	SP4	0.92	SP8	0.87	

The output from the goodness of fit structural model e-commerce platform 1 are: GFI=0.82; RMSEA=0.079; SRMR=0.096; NNFI=0.89; NFI=0.89; RFI=0.88; IFI=0.90; and CFI=0.90. In the other hand, for the e-commerce platform 2 are: GFI=0.84; RMSEA=0.070; SRMR=0.056; NNFI=0.92; NFI=0.92; RFI=0.91; IFI=0.92; and CFI=0.92. Lastly, for the e-commerce platform 3 are: GFI=0.79; RMSEA=0.078; SRMR=0.072; NNFI=0.90; NFI=0.88;

RFI=0.87; IFI=0.91; and CFI=0.91.

From the output written, the value of goodness of fit from this research model has a level of compatibility ranging from low, marginal, to good fit [28]. So that it can be concluded that the measurement model in this study is acceptable because of the compatibility of the overall model.

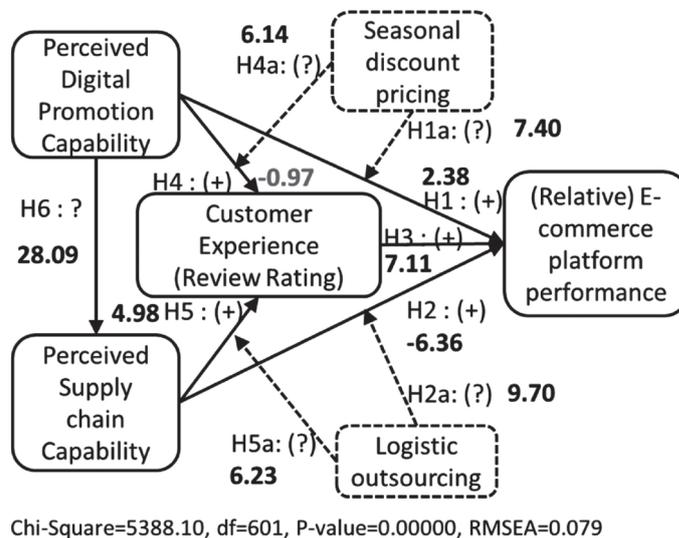


Figure 2. T-value structural model e-commerce platform 1

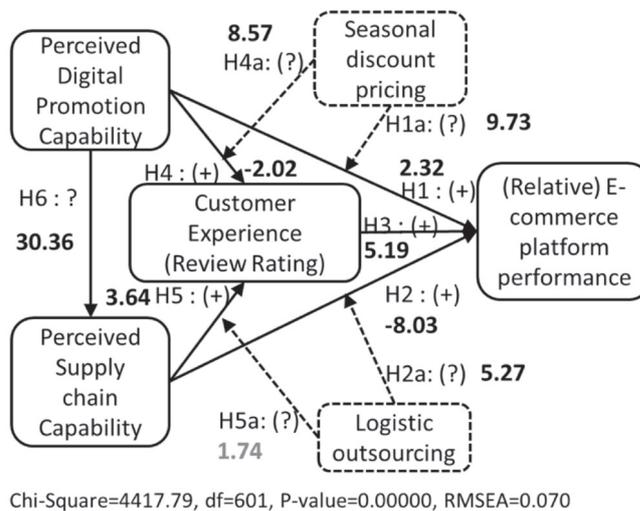


Figure 3. T-value structural model e-commerce platform 2

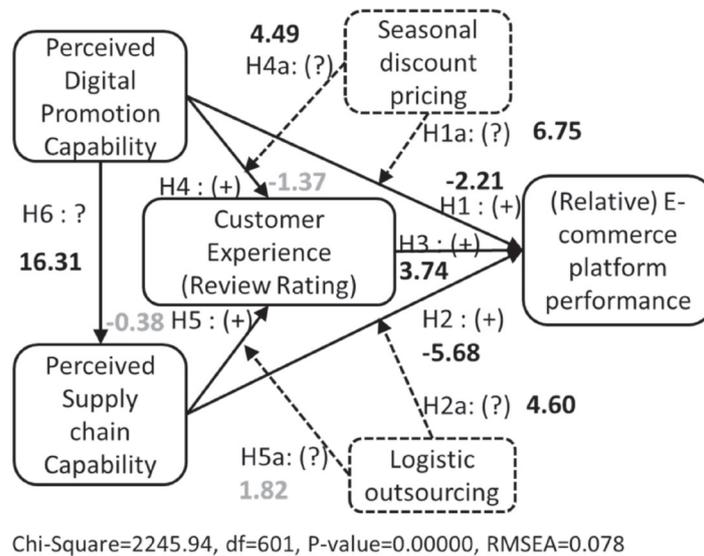


Figure 4. T-value structural model e-commerce platform 3

Based from figure 2 - 4 above, the output of processed data in this study indicate that there are several hypotheses which are rejected and have a different output result from previous study. The conclusions can be obtained in answering the problem formulation in this study, including:

1. Perceived digital promotion capability, (relative) e-commerce platform performance, & seasonal discount pricing

T-value result from structural model processed data e-commerce platform 1 & 2 has shown that H1 is accepted. So it indicates that perceived digital promotion capability has positive correlation with (relative) e-commerce platform performance. In the other hand, for the case in e-commerce platform 3, it is shown that perceived digital promotion capability is significant affected to (relative) e-commerce platform performance but in negative way. As one of (Karjaluoto, Mustonen & Ulkuniemi, 2015) finding, it is known that firms use digital marketing channel (dmc) to enhance customer relationship communications, support sales and create awareness. So, it is assumed because as third preference of e-commerce platform to use, digital promotion capability will be not affected in

accordance e-commerce platform 3 as they (user) have first and second preference in their mind. Giving some awareness and enhance customer relationship will be not working to them (who made a certain e-commerce platform as third preference) and decreasing the platform performance.

Another results show that seasonal discount pricing has intervening effect on relationship between perceived digital promotion and (relative) e-commerce platform performance for the case of all the e-commerce platform (1-3). This is in-line with the study from (Yen, 2010) that switching costs positively influence customer loyalty and the it could lead to the performance.

2. Perceived supply chain capabilities, (relative) e-commerce platform performance, & logistics outsourcing

T-value result from structural model processed data e-commerce platform 1-3 has shown that perceived supply chain capability is significant affected to (relative) e-commerce platform performance, but in negative way. Another result shows that logistics Outsourcing has intervening effect on relationship between perceived supply chain capability and

(relative) e-commerce platform performance for the case of all the e-commerce platform (1-3). It is assumed that because of the moderation role from logistics outsourcing so that supply chain capability will be affected negatively with the performance.

The researcher here, also try to process the data if it is unmoderated with logistics outsourcing among perceived supply chain capability and (relative) e-commerce platform performance. The results of t-value structural model from e-commerce 1,2,3 respectively are: 2.95 (significant), 2.07 (significant), 3.72 (significant). All (e-commerce platform 1,2,3) shown that perceived supply chain capability have positive correlation with (relative) e-commerce platform performance if not moderated with logistic outsourcing.

3. Customer experience (review rating) & (relative) e-commerce platform performance

T-value result from structural model processed data e-commerce platform 1-3 has shown that H3 is accepted. So it indicates that customer experience (review rating) has positive correlation with (relative) e-commerce platform performance. It is in accordance with the study from (Ramanathan, Ramanathan & Hsiao, 2012) which measure the performance indicators by using Sales growth, Customer base size, Customer satisfaction level, process enhancement and competitive advantages. (Tikno, 2017) highlight the importance of consumer engagement rate in websites and/or social media as proxy of consumer conversion rate.

4. Perceived digital promotion capability, customer experience (review rating), & seasonal discount pricing

T-value result from structural model processed data e-commerce platform 1 & 3 has shown that H4 is rejected. It indicates that perceived digital promotion capability has no correlation with customer experience (review rating). In the other hand, for the case in e-commerce platform 2, it is shown that perceived digital promotion capability is significant affected to customer experience

(review rating) but in negative way. Another results show that seasonal discount pricing has intervening effect on relationship between perceived digital promotion capability and customer experience (review rating) for the case of all the e-commerce platform (1-3). It is assumed that the result is not significant or significant but in negative way because of the role from seasonal discount pricing which moderate among perceived digital promotion capability and customer experience (review rating).

The results of t-value structural model e-commerce 1,2,3 if it is unmoderated with seasonal discount pricing among perceived digital promotion capability and customer experience (review rating), respectively are: 4.23 (significant), 8.96 (significant), 6.12 (significant). All (e-commerce platform 1,2,3) shown that digital promotion capability have positive correlation with customer experience (review rating) if not moderated with logistic outsourcing.

5. Perceived supply chain capabilities, customer experience (review rating), & logistics outsourcing

T-value result from structural model processed data e-commerce platform 1 & 2 has shown that H5 is accepted. So it indicates that perceived supply chain capability has positive correlation with customer experience (review rating) . In the other hand, for the case in e-commerce platform 3, it is shown that perceived supply chain capability is not significant affected to customer experience (review rating). Another result shows that logistic outsourcing has intervening effect on relationship between perceived supply chain capability and (customer experience (review rating) for the case of the e-commerce platform 1. But, in the case of e-commerce platform 2 & 3, it is shown that logistic outsourcing has not intervening effect on relationship between perceived supply chain capability and (customer experience (review rating)).

It is assumed that as a third e-commerce platform in customers' preference, the supply chain capability

will not affect to customer experience (review rating) because it's not their mainly preference such in first and second. As the same as for the role of logistic outsourcing which moderate in the second and third preference of e-commerce platform have not intervening because it is just important intervening in the first preference. As the main preference (e-commerce platform 1), it is important to consider the logistic outsourcing to increase customer satisfaction. (Joong-Kun Cho, Ozmet & Sink, 2008) highlighting the effective and efficient supply chain management is critical to the success of firms engaging in e-commerce.

6. Perceived digital promotion capability & perceived supply chain capabilities

T-value result from structural model processed data e-commerce platform 1-3 has shown that perceived digital promotion capability has positive correlation with perceived supply chain capabilities. One of motivation according to (Sahney, Ghosh & Shrivastava, 2013) is situational motivation which include time pressure, lack of mobility, geographical distance need for special items. Therefore, marketing campaign regarding with supply chain capability is needed to attract customers.

MANAGERIAL IMPLICATION

There are 4 (four) keys highlights for managerial implication form this research:

1. Perceived digital promotion capability which reflecting perceived capability on push-pull mobile promotion, online key opinion leader utilization and ad-personalization / consumer analytics, is the main key-factor to increase (or sustain) e-commerce performance.
2. Combining digital promotion capability and Seasonal discount pricing will sthrengten/ increase e-commerce performance, since seasonal discount pricing has intervening effect on relationship between perceived digital promotion and (relative) e-commerce platform

performance for the case of all the e-commerce platform

3. As predicted, customer experience (review rating) has positive correlation with (relative) e-commerce platform performance, despite perceived digital promotion capability has no correlation with customer experience (review rating)
4. Since perceived digital promotion capability has positive correlation with perceived supply chain capabilities, despite perceived supply chain capability negatively correlated with (relative) e-commerce platform performance, Logistics outsourcing has intervening effect on relationship between perceived supply chain capability and (relative) e-commerce platform performance. From those three findings related with supply chain capability, therefore, it is crucial to have strong outsourcing logistic / delivery partners network to increase e-commerce platform performance. .

CONCLUSION

In several cases, for e-commerce platform 2 and 3 as second and third preference, the results shows that it is not significant or significant but in negative way not just like in e-commerce platform 1 as first preference which is significant. It is in the case among perceived digital promotion capability and (relative) e-commerce platform performance, also perceived supply chain capabilities, customer experience, and logistics outsourcing. Because customers have their first preference to be prioritized, that's why for e-commerce platform to be the second and third preference are just an option if the first e-commerce platform could not meet customers' expectation.

Another cases show that because of the role from moderation such logistics outsourcing among perceived supply chain capability and (relative) e-commerce platform performance, also seasonal discount pricing among perceived digital promotion

capability and customer experience (review rating) make the result not significant or significant but in negative way. The result will be significant affect each other if there is no moderation role among them.

It is important for the e-commerce platform provider/ player to consider they marketing campaign and supply chain capability to fit in the case if they are as the first, second, or third preference in customers' mind. Other than that, not to infer the seasonal discount pricing among digital promotion capability and e-commerce platform performance.

The limitation of this research problem is lying on e-commerce platform market place and end customers only. For further research, it is suggested to be focussing on Small Medium Enterprises (SME) within e-commerce marketplace, as another customer of e-commerce platform. Another recommendation to be considered is to use research on time frames to see long-term simulations. ■

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REFERENCES

- A. B. Bower and J. G. Maxham (2012). Return shipping policies of online retailers: Normative assumptions and the long-term consequences of fee and free returns. *Journal of Marketing*, 76(5), 110-124, <https://doi.org/10.1509%2Fjm.10.0419>
- A. Hortaçsu and C. Syverson (2015). The Ongoing Evolution of US Retail: A Format Tug-of-War. *Journal of Economics Perspective*, 29(4), 89-112, <https://doi.org/10.3386/w21464>
- A. Molla and R. Heeks (2007). Exploring e-commerce benefits for businesses in a developing country. *The Information Society*, 23(2), 95-108, <https://doi.org/10.1080/01972240701224028>
- B. Aslam and H. Karjaluoto (2017). Digital advertising around paid spaces, E-advertising industry's revenue engine: A review and research agenda. *Telematics and Informatics*, 34(8), 1650-1662, <https://doi.org/10.1016/j.tele.2017.07.011>
- C. C. Defee and B. S. Fugate (2010). Changing perspective of capabilities in the dynamic supply chain era. *International Journal of Logistics Management*, 21(2), 180-206, DOI:10.1108/09574091011071915
- C. G. Cegielski, L. Allison Jones-Farmer, Y. Wu, and B. T. Hazen (2012). Adoption of cloud computing technologies in supply chains: An organizational information processing theory approach. *International Journal of Logistics Management*, 23(2), 184-211, <https://doi.org/10.1108/09574091211265350>
- C. H. Wong, G. W. H. Tan, B. I. Tan, and K. B. Ooi (2015). Mobile advertising: The changing landscape of the advertising industry. *Telematics and Informatics*, 32(4), 720-734, <https://doi.org/10.1016/j.tele.2015.03.003>
- E. Bakker, J. Zheng, L. Knight, and C. Harland (2008). Putting e-commerce adoption in a supply chain context. *International Journal of Operations and Production Management*, 28(4), 313-330, <https://doi.org/10.1108/01443570810861543>
- E. Hartmann and S. Herb (2014). Opportunism risk in service triads - a social capital perspective. *International Journal of Physical Distribution & Logistics Management*, 44(3), 242-256, <https://doi.org/10.1108/IJPDLM-08-2012-0249>
- H. Karjaluoto, N. Mustonen, and P. Ulkuniemi (2015). The role of digital channels in industrial marketing communications. *Journal of Business & Industrial Marketing*, 30(6), 703-710, <https://doi.org/10.1108/JBIM-04-2013-0092>
- H. R. Greve and S. Y. Song (2017). Amazon warrior: How a platform can restructure industry power and ecology. *Advances in Strategic Management*, 37, 299-335, <https://doi.org/10.1108/S0742-332220170000037010>
- I. Pentina and R. W. Hasty (2009). Effects of multichannel coordination and e-commerce outsourcing on online retail performance. *Journal of Marketing Channels*, 16(4), 359-374, <https://doi.org/10.1080/10466690903188021>
- I. Sirkeci and L. B. Magnúsdóttir (2011). Understanding illegal music downloading in the UK: A multi-attribute model. *Journal of Research in Interactive Marketing*, 5(1), 90-110, <https://doi.org/10.1108/17505931111121543>
- J. Joong-Kun Cho, J. Ozment, and H. Sink (2008). Logistics capability, logistics outsourcing and firm performance in an e-commerce market. *International Journal of Physical Distribution & Logistics Management*, 38(5), 336-359, <https://doi.org/10.1108/09600030810882825>
- J. Luo, S. Ba, and H. Zhang (2012). The effectiveness of online shopping characteristics and well-designed websites on satisfaction. *MIS Quarterly*, 36(4), 1131-1144, <https://doi.org/10.2307/41703501>
- K. Picot-Coupey, E. Huré, and L. Piveteau (2016). Channel design to enrich customers' shopping experiences: Synchronizing clicks with bricks in an omni-channel perspective - the Direct Optic case. *International Journal of Retail and Distribution Management*, 44(3), 336-368, <https://doi.org/10.1108/IJRDM-04-2015-0056>
- L. Hsiao and Y. J. Chen (2013). The perils of selling online: Manufacturer competition, channel conflict, and consumer preferences. *Marketing Letters*, 24(3), 277-292, <https://doi.org/10.1007/s11002-012-9216-z>
- M. Bonera (2011). The propensity of e-commerce usage: The influencing variables. *Management Research Review*, 34(7), 821-837, <https://doi.org/10.1108/01409171111146706>
- M. Hänninen, A. Smedlund, and L. Mitronen (2018). Digitalization in retailing: multi-sided platforms as drivers of industry transformation. *Balti. J. Management*, 13(2), 152-168, <https://doi.org/10.1108/BJM-04-2017-0109>
- M. Kim, J. Kim, J. Choi, and M. Trivedi (2017). Mobile Shopping Through Applications: Understanding Application Possession and Mobile Purchase. *Journal of Interactive Marketing*, 39, 55-68, <https://doi.org/10.1016/j.intmar.2017.02.001>
- N. Gudigantala, P. Bicen, and M. (Tae in) Eom (2016). An examination of antecedents of conversion rates of e-commerce retailers. *Management Research Review*, 39(1), 82-114, <https://doi.org/10.1108/MRR-05-2014-0112>
- O. E. Williamson (2009). Pragmatic methodology: A sketch, with applications to transaction cost economics. *Journal of Economic Methodology*, 16(2), 145-157, <https://doi.org/10.1080/13501780902940729>
- R. Boateng, R. Hinson, R. Heeks, and A. Molla (2008). E-commerce in least developing countries: Summary evidence and implications. *Journal of African Business*, 9(2), 257-285, <https://doi.org/10.1080/15228910802479919>
- R. Ramanathan, U. Ramanathan, and H. L. Hsiao (2012). The impact of e-commerce on Taiwanese SMEs: Marketing and operations effects. *International Journal of Production Economics*, 140(2), 934-943, <https://doi.org/10.1016/j.ijpe.2012.07.017>

- S. Fayezi, A. O'Loughlin, and A. Zutshi (2012). Agency theory and supply chain management: A structured literature review. *Supply Chain Management*, 17(5), 556-570, <https://doi.org/10.1108/13598541211258618>
- S. Sahney, K. Ghosh, and A. Shrivastava (2013). Buyer's motivation' for online buying: An empirical case of railway e-ticketing in Indian context. *Journal of Asia Business Studies*, 8(1), 43-64, <https://doi.org/10.1108/JABS-07-2011-0036>
- S. Zhou, B. Sun, W. Ma, and X. Chen (2018). The pricing strategy for Fuji apple in Shaanxi of Chain under the e-commerce environment. *Kybernetes*, 47(1), 208-221, <https://doi.org/10.1108/K-06-2017-0230>
- Sharma, S. (1996). *Applied Multivariate Techniques*. John Wiley and Sons Inc., PA: New York
- Tikno (2017). Measuring performance of facebook advertising based on media used: A case study on online shops in Indonesia. *Procedia Computer Science*, 111, 105-112, <https://doi.org/10.1016/j.procs.2017.06.016>
- W. Gong (2009). National culture and global diffusion of business-to-consumer e-commerce. *Cross Cultural Management: An International Journal*, 16(1), 83-101, <https://doi.org/10.1108/13527600910930059>
- Wijanto (2008). *Structural Equation Modelling dengan LISREL 8.8: Konsep dan Tutorial*. Graha Ilmu, PA: Yogyakarta.
- Y. H. Hsiao, M. C. Chen, and W. C. Liao (2017). Logistics service design for cross-border E-commerce using Kansei engineering with text-mining-based online content analysis. *Telematics and Informatics*, 34(4), 284-302, <https://doi.org/10.1016/j.tele.2016.08.002>
- Y. J. Kim and J. Han (2014). Why smartphone advertising attracts customers: A model of Web advertising, flow, and personalization. *Computers in Human Behavior*, 33, 256-269, <https://doi.org/10.1016/j.chb.2014.01.015>
- Y. S. Yen (2010). Can perceived risks affect the relationship of switching costs and customer loyalty in e-commerce?. *Internet Research*, 20(2), 210-224, <https://doi.org/10.1108/10662241011032254>
- Y. Yu, X. Wang, R. Y. Zhong, and G. Q. Huang (2017). E-commerce logistics in supply chain management Implementations and future perspective in furniture industry. *Industrial Management and Data Systems*, 117(10), 2263-2286, <https://doi.org/10.1108/IMDS-09-2016-0398>