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A Study of Indonesian Online Marketplace: Information Processing Theory Paradigm

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Abstract

Purpose: This study uses the protection motivation theory and information processing theory to discuss the high number of fraud phenomenon in Indonesia which causes worries to the internet users. The second problem is the large amount of information transparency in e-commerce which actually hinders the users in making decisions so it causes a negative behavior pattern, namely discontinue usage intention. **Design/methodology:** Therefore, this research hopes to provide insight to the online or e-commerce business community, especially for Tokopedia, to develop its business from understanding the factors influencing consumer attitude when shopping online. The sample are students from Universitas Indonesia, Institut Teknologi Bandung, Institut Pertanian Bogor, Universitas Gadjah Mada and Institut Teknologi Surabaya, with total 900 respondents. **Result:** The results of this research indicate that ubiquitous connectivity (UC) variable significantly affects variables such as the privacy concern (PC), information transparency (IT) and information overload (IO). PC and IO variables also significantly affect Discontinue Usage Intention (DUI). **Conclusion:** This study gives a new perspective that despite the phenomenon, the millennial generation especially are not entirely concerned about the privacy concern, however, this study clearly shows that the privacy issue in the digital word continues to be something that needs to be cared for.

Keywords : Digital Marketing, Protection Motivation Theory, Ubiquitous Connectivity, Information Transparency, Information Overload

JEL Classification Code M30, M31, Q55

1. Introduction

The arrival of the internet and mobile devices has changed people's shopping behavior. The trend of this new lifestyle caused a shift in consumer behavior in choosing products (Teofilus, Sutrisno, & Gomuljo, 2019). Nowadays people can buy things anytime and anywhere. Online shopping trends in Indonesia is also becoming more popular recently and the growth of online shopping in Indonesia has also increased. One of the factors why online shopping is becoming a global phenomenon nowadays is because it offers ease, flexibility and time efficiency, both for the sellers and consumers (Setiyaningrum & Hidayat, 2016; Simangunsong, 2018). Based on research by Vania, Sumiati, and Rohman (2018), Indonesia is the country with the highest Instagram users in Asia-Pacific with 700 million active users per month.

This phenomenon of online shopping trends in Indonesia benefits consumers such as facilitating their search for

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product information and improving the quality of their online purchasing decisions (Pavlou, 2003; Pavlou & Sawy, 2006; Zhou, Wang, Xu, Liu, & Gu, 2018). Having said that, the decision to actually purchase a product comes back to the customer's judgment and decision despite all the information already provided to the customer (Teofilus & Ng, 2017). In such transparent environment, it becomes easier for marketers to get information that allows them to analyze their customer profiles and infer the costs of their competitors (Zhu, 2002). Having said that, there are also some consumers that reject sharing their personal information and have them analysed (Agustina, Najib, & Suharjo, 2016), therefore, it is within the company's discretion to have a specific and appropriate marketing strategy to reach their target consumers (Teofilus, Singh, Sutrisno, & Kurniawan, 2020).

The information provided in the e-commerce concept is the availability of product transparency, vendor transparency, and payment transparency (Zhou et al., 2018). Product transparency deals with price, features, quality and product availability. Vendor transparency refers to reputation, warranty, and ways to contact the vendor. Whereas transaction transparency refers to shipping information, order methods, order status, payment methods, and privacy and securities (Pavlou, 2003; Pavlou & Sawy, 2006; Zhou et al., 2018). But information transparency that should reduce consumer search on the internet, in fact, delay or slow down consumers in searching. This is caused by too many variations of prices on the internet and consumers trying to find the best or ideal price for their purchasing decision (Hanna, Lemon, & Smith, 2019). This problem is called information overload, a situation that occurs when the information presented is too much compared to the seeker's ability to process and handle that information (Lucian & de Farias, 2009).

The information overload phenomenon occurs in two contexts; brands and attributes (Wilkie, 1974). The first situation is when consumers have to choose one out of a series of brands (alternative) of similar products. In this scenario, the amount of information available about brand attributes is limited, however there are excess amount of brands to be analyzed. The second situation considers a scenario with a small number of available brands, but a large pool of information about product or service attributes (Lucian & de Farias, 2009). Both situations result in a decrease in the ability of consumers to choose the best brand that causes confusion in purchasing decisions (Jacoby, Speller, & Berning, 1974).

The problem of online shopping does not stop here, there is a concern around the lack of user privacy when accessing e-commerce. These concerns are privacy, securities, and hacking actions that are linked to ownership, as personal data is no longer purely in the power of the

user due to a third party (Tsai, Jiang, Alhabash, Larose, Rifon, & Cotten, 2016; Weinberg, Milne, Andonova, & Hajjat, 2015). Other effects also include fear of improper access to their personal information, secondary use, errors, fraud, data collection, and financial losses. Personal information includes personal data and financial information (Hong & Thong, 2013). This fraud phenomenon in Indonesia is the reason privacy concern is an issue that must be considered. In this problem, there are two sides to the user's character in dealing with privacy concerns, namely digital voyagers and digital pragmatists. Indonesian people, including digital voyagers, have the following characteristics: low risk perception, low awareness in sharing data, and low risk avoidance. This explains why Indonesians tend to experience fraud in online shopping, in contrast to digital pragmatists who are defensive in their privacy.

According to Lee, Park, Chung, and Blakeney (2012), ubiquitous connectivity is a key feature of cellular technology, explaining that people can use cellular services without limited by time and place. This connectivity enables people to maintain a constant and synchronized relationship with someone (Gao, Liu, Guo, & Li, 2018). This phenomenon appears to have a strong presence in Indonesia. Based on data from Nielsen Consumer & View, there was 45% internet users in Indonesia in 2017, which is twice as many compared to 2013 which was only 20%. Seventy eight percent of them were accessed by smartphone. It is estimated that the negative effect caused by ubiquitous connectivity also has an effect on user behavior patterns, namely discontinue usage intention. Discontinue usage behavior intention are classified into 3 gradual stages: short breaks, controlling activities and exclusion behavior (Zhang, Zhao, Lu, & Yang, 2016). This is supported by Gao et al. (2018), who examined the effects of privacy concern and information overload on discontinue usage intention.

This research aim to investigate the paradox of ubiquitous connectivity in this millennial's era, where it might lead to negative effect such as discontinue usage intention. In the context of e-commerce in Indonesia, quite a significant annual growth of e-commerce use is observable. However, with the discussion regarding privacy concern and ubiquitous connectivity postulated by Gao et al. (2018) indicate that there is gap in responding to the matter. This study aims to validate this phenomenon, specifically in the context of Indonesia. This study will be conducted based on the demography of online users in Indonesia, followed by sampling and data will be analyzed for descriptive analysis and inferential to assess the correlation of each variables.

2. Literature Review

2.1. Protection motivation theory

Protection motivation theory (PMT) was first conceived by Rogers (1975) in the case of a person's psychological behavior when dealing with risk. This theory states that a person's motivation to engage in risk reduction behavior is measured by three cognitive assessments: the magnitude of the risk, the probability of the risk occurring, and the effectiveness of the protective response. This resulted in individuals acting of protection and coping as an effect of the risk faced by someone. Protection motivation is considered as a trigger that directs a change in attitude because of the fear when faced with a risk. Coping behavior includes either taking direct action or inhibiting the risk.

Then PMT develops towards an online context. Many researches related to PMT focuses on 2 areas of the field - health studies and information systems research. Youn (2009) in his research began to apply this theory to the context of online privacy, adolescent privacy issues can be considered as protective motivation, which causes them to engage in risk reduction behaviors. The greater the individual's concern about marketers' information gathering and sharing practices, the more likely a person is to try to adopt privacy protection behaviors. Thus, this study views the level of privacy issues as protective motivations that enable coping behavior to deal with privacy risks (LaRose & Rifon 2007; Tsai et al., 2016).

2.1. Information processing theory

In this research the theory of protection motivation theory is collaborated with information processing theory related to the effect of ubiquitous connectivity. This theory was first put forward by Atkinson and Shiffrin (1968) in their study which means information processing theory is a cognitive approach to understanding information processes by individuals. In this theory there are 3 stages of the information process. First, the human brain receives information from different sensory inputs and stimuli that are immediately transferred to hidden storage such as sensory memory. Not all information is needed by the recipient of information, therefore filtered information enters the second stage, short-term memory. In this stage there is a process of categorizing, comparing and combining the information. But due to the lack of repetition, the information is forgotten. Only few enters the long-term memory stage that can be remembered even after many years. The ability in the information process is influenced by factors of human cognition, learning, and literacy.

Information processing theory approach began to be used in the realm of online shop behavior in the formation of strategies to obtain sales. Some studies focus on cognitive perceptions that influence customer behavior. In detail, they construct IPT theory to propose models that test individual attention, cognitive processes, decisions, and evaluations from users (Pappas, Kourouthanassis, & Giannakos, 2016). However, the IPT model in the study was used as a positive relationship to purchasing intentions in online shops in the formation of cognitive and affective targets for consumers. In the focus of e-commerce, information processing theory was also used for e-commerce strategies, especially when implementing online sales in two different media, namely on mobile and the web. This was discussed further by Furner and Zinko (2016) who conducted simulation-based experiments aimed at understanding difference between information processes on web vs. mobile-based computing environments in the face of information overload. The result showed that consumers who read online reviews about the product and service, will be better able to overcome the limitations associated with information overload when using a web-based review system rather than mobile-based reviews.

2.3. Ubiquitous connectivity

Lee et al. (2012) in their journal defined the ubiquitous connectivity phenomenon as ubiquitous connectivity as a key feature of cellular technology, explaining that people can use cellular services without the limit of time and place. The ubiquitous connectivity enabled by smartphone based SNS (Social Networking Site) allows people to maintain a seamless, constant, and synchronized connection with family, friends, and acquaintances, which are reported as the primary purpose of using SNS. It is noteworthy that the characteristics of mobile phones from smartphones allow people to constantly stay connected with others, in this case, it is hoped that constant connectivity can be a fundamental source of improvement by meeting shared needs anytime and anywhere.

Choi (2016) in his study discussed the positive effects of social presence and negative privacy concerns from negative ubiquity . Social presence gives a sense of closeness of individual relationships with other individuals using social networking, but privacy concern also gives concern about the openness of personal information to other individuals on social networks. This study also found the effects of social presence and privacy concern that increase their enjoyment in using social networks on smartphones. This enjoyment is the key for individuals in continuance intention in social networking. Hence, the first hypothesis in this article is as follows:

H1: Ubiquitous Connectivity has an effect on Privacy Concern

Furthermore, Granados, Gupta, and Kauffman (2010) stated that the current internet phenomenon helps user because of the vastly available information (ubiquitous connectivity), in its in B2C (business to customer) e-commerce. Here, information transparency is perceived as a strategy as companies consider the transaction of enticing new customers with market information. Zhou et al. (2018) stated that in the context of B2C e-commerce, information transparency is defined as which point where information in the web is provided and accessible by consumers. This is supported by the ubiquitous connectivity phenomenon that enables user to be connected and access vast sources of information. Therefore, the following hypothesis is brought forth:

H2: Ubiquitous Connectivity has an effect on Information Transparency

Moreover, Swar, Hameed, and Reyachav (2017) argued that information overload comes from the ubiquitous connectivity phenomenon that offers a high amount of information that may never be used, hence, users may have difficulties processing all of the received information. As a result, there is a negative psychological reaction. The ubiquitous connectivity would cause much information to be received without having its validity tested, making individuals experiencing difficulty in processing all of the information, hence, it is called information overload (Gao et al., 2018). This becomes an issue as each individual has a different capability to process information when they receive too much information and unable to process them, and this is caused by ubiquitous connectivity (Eppler & Mengis, 2004)

H3: Ubiquitous Connectivity has an effect on Information Overload**2.4. Privacy concern**

Akhter (2012) argued that online privacy concerns are the user's concern in losing control of their personal information and do not know what their data is used for. This study also discussed issues on privacy concern that influence consumer behavior in conducting transactions. The result obtained is privacy concerns have a significant negative effect on online spending. This is due to the many cases of users losing personal information due to hackers (Tsai et al., 2016; Weinberg et al., 2015). This negligence can be caused by companies making human error or lack of effective security in protecting personal data of consumers.

The loss of personal information often results in unauthorized purchases or other misuse, causing unreasonable concerns and problems for the people who own the data. The data can be in the form of personal data and payment information that must be provided when conducting online transactions. Therefore, people who are worried about privacy data have reduced online spending activities.

Previous research disclosed by Lwin, Wirtz, and Stanaland, (2016) revealed a high reputation and communication quality improve behavior that focuses on promotion and mediation by trust. Conversely, low quality communication and high data sensitivity increases behavior that focuses on prevention and is mediated by privacy concerns. Higher trust leads to behaviors that focus on promotion such as the desire to invest in relationships and loyalty behavior. In addition, higher privacy concerns lead to behaviors that focus on prevention and defensive behavior. The issue of privacy concern is further discussed by Jung, Naughton, Tahoun, and Wang (2017) that examined the relationship of advertisements to privacy concerns. This phenomenon is explained in the cluttered advertising environment situation, advertisers provide advertisement adjustments for individual consumers based on personal information. This targeting technique is a successful way for advertisers to increase the effectiveness of advertisements, but also causes users to notice their personal privacy.

In their study, Gao et al. (2018) stated that privacy concern does not have a direct effect on discontinue usage intention without moderation of other variables such as protection motivation, this suggests that users have to experience fear of the privacy concern first, and then it would trigger the discontinue usage intention behavior. However, on the contrary, Akhter (2012) argued explicitly that privacy concern will inhibit decisions or reduce the consumers' interest for online transactions. This is in accordance to discontinue usage intention characteristic whereby users reduce the use of certain online platform. Therefore, the following hypothesis is proposed:

H4: Privacy Concern has an effect on Discontinue Usage Intention**2.5. Information transparency**

Zhu (2002) revealed that the online B2B (business to business) environment makes a large amount of data about prices and costs that tend to make information more transparent in the electronic market. In this study, the focus of this research was on the information effect of internet based B2B exchanges and explored incentives for buyers and suppliers to join B2B exchanges. This research found

that information disclosure rules greatly influence company incentives (Yang, Li, & Heck, 2015; Mittal & Agrawal, 2016). Data transparency benefits some companies but disadvantages others. It was also found that low-cost suppliers and high-value buyers would be early adopters of B2B exchanges. In addition, B2B exchange owners must maintain the right balance between information transparency and data confidentiality to minimize competition risk while maintaining the collaborative benefit of information transparency.

Zhou et al. (2018) revealed the importance of information transparency in e-commerce. The research showed that consumers abandon their online purchases on e-commerce websites because of the lack of transparency of website information (Stohl, Stohl, & Leonardi, 2016; Zhu, 2002). The results found that (1) product transparency, vendor transparency, and transaction transparency significantly affect the transparency of perceived information; (2) perceived information transparency significantly increases consumer online purchase intentions; and (3) risk perception mediates some of the effects of information transparency perceived on purchase intentions. According to Hanna et al. (2019), there are changes in the internet era now that makes it easy for them to purchase goods or services because of the transparency information, especially price. Information transparency should reduce consumer search on the internet, but in fact delay or slow down consumers. This is caused by too many variations in prices on the internet and consumers trying to find the best or ideal price for their purchasing decisions. Hence, the following hypothesis can be proposed:

H5: Information Transparency has an effect on Discontinue Usage Intention

2.6. Information overload

The first research on Information Overload was conducted by Jacoby et al. (1974) which revealed the relationship between the amount of information and the information process usually described as an inverted U curve. The curve means that the information process increases when decision makers experience a lack of information, while the information process will decrease when they experience an excess of information. This can be interpreted as information overload that makes it difficult for individuals to process information, resulting in individual stress and unable to provide the best decision.

The problem of information overload also affects information seekers on health-related issues. This was discussed in a study by Swar et al. (2017) that explained the information overload phenomenon occurs when the information presented is too much compared to the

searcher's ability to process and handle that information (Lee et al., 2017; Lucian & de Farias, 2009). The results of this study indicate the positive effect of information overload which influences behavior to discontinue using OHI (online health information) search.

Information overload is also developing in e-commerce. According to Roetzel (2018), information overload is a situation where decision makers face a set of information with the burden of information characteristics such as the amount, complexity, level of redundancy, contradiction and inconsistency, which consists of the accumulation of individual information cues of different sizes and complexities hinder the ability of decision makers to optimally determine the best decision (Li, 2016; Nagar & Gandotra, 2016). The probability of achieving the best possible decisions is defined as the performance of decision making. The use of information that is less than optimal due to the limitations of scarce individual resources, scarce resources can limit individual characteristics (such as serial processing capabilities, limited short-term memory) or limit task related equipment (time to make decisions, budget).

Research by Furner and Zinko (2016) elaborate the effectiveness of online web-based product reviewing system to facilitate trust and buying intention, furthermore, the results show that the existence information in the review increases trust and buying intention to a point where weight of information becomes too much and customers' trust and buying intention start to decrease. It also stated that the amount of information outside customer's processing capability can cause information overload. Having inconsistent product variety and services between web sites or other issues can cause negative emotions, such as exhaustion and worry in customers and it will impact on the subjectivity of their purchase decision. It is clear from this phenomenon that greater amount of information is not always better for customer and vice versa, as customer may make incorrect decisions. Subsequently, customers would lessen their use of the online shop, therefore, it can be hypothesized that:

H6: Information Overload has an effect on Discontinue Usage Intention

2.7. Discontinue usage online platform intention

Zhang et al. (2016) discussed the discontinuous usage intention on understanding the use of discontinued SNS and what factors are causing such behavior. There are three types of discontinuous usage intention behavior on social networking sites: short breaks, control of activities and exclusion behavior. In the context of SNS, it can be defined as an individual intention to reduce the intensity of SNS

usage, stop using SNS temporarily or permanently or switch to other alternative SNS. Luqman, Cao, Ali, Masood, and Yu (2017) investigated the use of Facebook in social, cognitive, and hedonic focus that causes ongoing stress and fatigue that caused individuals to intentionally not use Facebook anymore. The research provided that psychological or behavioral effects or consequences force them to reduce or not even using Facebook due to techno stress and fatigue due to SNS (Social Networking Site). The Techno stress is a result of excessive use for social, hedonic, and cognitive use (Zhang et al., 2016).

Chen, Tran, and Nguyen (2019) in their study investigated how to abuse excessive notifications, techno-stress types (techno-load and intrusion) affect the use of the application (Luqman et al., 2017). This study also conveyed important insights about various coping strategies and discontinuance behavior carried out by mobile shoppers to solve the problem of information overload and disruption as well as to deal with their negative emotions towards threats from the use of mobile shopping applications. In addition, with high information control and independence in using mobile devices, users prefer to take action to deal with interference. Finally, disruption handling strategies forbid discontinuance behavior, while self-preserving strategies encourage stopping behavior. The results of this study benefit mobile shopping application users who are in danger of stress to develop strategies and take appropriate actions to protect themselves and retailers who use applications on smartphones to provide products and services to gain access to users more efficiently. Based on the literature review explained, it appears that many studies discuss from the social network system perspective, this particular study adopts a different perspective where this study perceive

that this phenomenon can also be further developed towards the e-commerce realm, by considering variables that have been suggested in the literature.

3. Method

The population of this research is online shoppers in Indonesia. Samples are part of a population consisting of sample units. According to Malhotra (2010), purposive sampling is a sampling technique with certain characteristics possessed. The character of respondents in this study are the millennials in Indonesia which is concentrated on the Java Island. The reason why the sample is concentrated in Java is because 75% of internet users in Indonesia are focused in Java Island, which is sectioned into West Java, East Java, and Central Java. Therefore, this study recruit samples from five largest universities in Indonesia, where these universities are spread across the Java Island, as well as because the Times Higher Education World University Ranking (THE WUR) suggests that universities are the representative of Indonesia. The sample are from Universitas Indonesia, Institut Teknologi Bandung, Institut Pertanian Bogor, Universitas Gadjah Mada and Institut Teknologi Surabaya. According to Hair (2014), if the research conducts multivariate analysis, the number of sample members has a ratio of 10:1 with a minimum of 5:1. In this study, the number of samples is 10 times the variable obtained, it is 10×18 (independent variable + dependent) = 180 samples from each university. So, the total sample from this study is 900 samples.

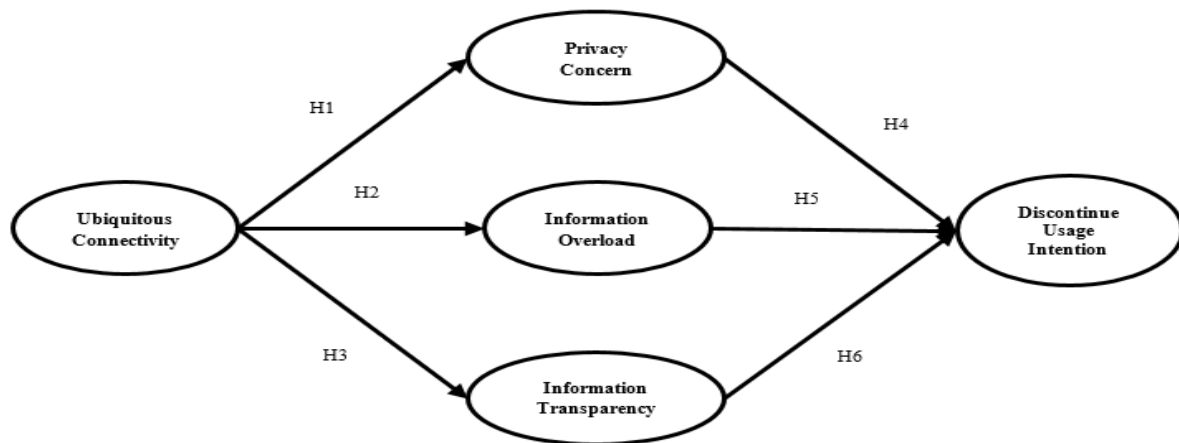


Figure 1: Conceptual framework

This study uses a data collection method that uses primary data through a questionnaire, namely data collection techniques by making a list of questions that have been prepared. The questionnaire will be implemented in two stages, whereby operational items that are adapted from previous research is translated to Bahasa Indonesia and translated back to English to avoid the misinterpretation in the translation process. Besides that, the questionnaire will be checked again to avoid informal fallacy such as double-barrelled question. This study uses a Likert scale as a measurement tool. Measurement in using a Likert scale is an indication of a study that has 5 (five) scales useful to simplify the process of calculating results and make it easier for respondents to respond (Sekaran & Bougie, 2010).

For operational item from UC, three items are adapted from Choi (2016) that encompass the ability to communicate, connected, and ease in communication. Whilst PC uses 4 operational items that are adapted from Huang, Goo, Nam, and Yoo (2017) that encompass too much concern to privacy concern on sensitive information. Furthermore, IO uses 4 items that are adapted from Zhang et al. (2016) where the items include information overload of users. Variable IT uses three items that are adapted from Zhou et al. (2018) that emphasizes on product, vendor, and transparency. Lastly variable DUI that adapts 3 items suggested by Zhang et al. (2016) that encompass decreased usage to taking short breaks when using the internet. From the 900-questionnaire given out, only 615 questionnaires were returned by respondents. This makes the response rate of this study at 68.3%.

This research method uses PLS SEM analysis. The reason for this is because this study seeks to find the relationship between variables to determine the best model. Besides that, the use of SEM PLS is also for exploring the theory being developed, hence, adopting PLS SEM will result in this study being more robust. Furthermore, research in social science will have a bigger chance to have a multicollinearity effect, hence, PLS can be used as one of the solutions to this issue. In the PLS method, there are two component types in the clause model, namely the measurement model and the structural model. The measurement model is analysed conducting reliability and validity tests. The validity testing in this study uses discriminant validity and convergent validity approach, whereby discriminant validity test will refer to the factor loading value of each instrument. Based on Hair, Black, Babin, and Anderson (2017) factor loading value will be adjusted to the total number of respondents in this study, where the factor loading for 900 respondents is > 0.35 . Meanwhile, for the convergent validity value, this study referred to the value of average variance extracted (AVE) whereby AVE value should be > 0.5 . The testing will be

followed with common method bias (CMV) where the testing is done so each operational item does not have a relation that will cause error. The reliability test itself uses Composite Reliability test where the variable had good composite reliability if it had a composite reliability ≥ 0.7 even though it was not an absolute standard, and Alpha Cronbach where a variable had good composite reliability if it had an alpha coefficient ≥ 0.6 . The structural model is performed by the R-Square test, Stone-Geiser Q-Square test, F-square test, and T test.

4. Results and Discussion

4.1. Result

In testing the outer model can be seen from the convergent value that can be seen from the outer loading ≥ 0.35 and AVE ≥ 0.5 from Table 1. Discriminant validity is assessed based on crossloading > 0.7 and greater than other crossloading values and it can be seen that the results are stated to meet discriminant validity. This information can be seen in Table 2. Cross Loading. To state that the variable is consistent, the variable must have a composite value of ≥ 0.7 and all variables show that the value is greater than 0.7, it means all the variable is consistent. This information can be seen in Table 3. Composite Reliability.

Table 1: Factor Loading, AVE and Composite Reliability

Variables	Indicator	Loading Factor	AVE	Composite Reliability
Ubiquitous Connectivity	UC1	0,817	0.777	0.912
	UC2	0,865		
	UC3	0,880		
Privacy Concern	PC1	0,796	0.667	0.884
	PC2	0,789		
	PC3	0,847		
	PC4	0,881		
Information Transparency	IT1	0,887	0.743	0.896
	IT2	0,875		
	IT3	0,822		
Information Overload	IO1	0,737	0.688	0.898
	IO2	0,813		
	IO3	0,871		
	IO4	0,836		
Discontinue Usage Intention	DUI1	0,917	0.730	0.890
	DUI2	0,866		
	DUI3	0,860		

Table 2: Cross Loading

Indicator	Ubiquitous Connectivity	Privacy Concern	Information Transparency	Information Overload	Discontinue Usage Intention
UC1	0.817	0.109	0.348	0.044	0.038
UC2	0.865	0.150	0.311	0.089	0.043
UC 3	0.880	0.150	0.373	0.080	0.054
PC1	0.114	0.796	0.103	0.213	0.139
PC2	0.095	0.789	0.022	0.203	0.163
PC3	0.103	0.847	0.018	0.155	0.156
PC4	0.151	0.881	0.067	0.202	0.167
IT1	0.352	0.008	0.887	0.170	0.104
IT2	0.363	0.049	0.875	0.106	0.069
IT3	0.327	0.113	0.822	0.150	0.046
IO1	0.086	0.172	0.122	0.737	0.294
IO2	0.038	0.187	0.099	0.813	0.253
IO3	0.029	0.219	0.133	0.871	0.342
IO4	0.109	0.181	0.171	0.836	0.348
DUI1	0.048	0.175	0.097	0.394	0.917
DUI2	0.018	0.165	0.064	0.321	0.866
DUI3	0.077	0.158	0.059	0.288	0.860

Table 3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative %
1	4.272	25.129	25.129	4.272	25.129	25.129	2.772	16.306	16.306
2	2.827	16.629	41.758	2.827	16.629	41.758	2.708	15.927	32.233
3	2.286	13.448	55.206	2.286	13.448	55.206	2.326	13.684	45.917
4	1.583	9.313	64.519	1.583	9.313	64.519	2.239	13.169	59.087
5	1.283	7.546	72.065	1.283	7.546	72.065	2.206	12.979	72.065
6	.663	3.898	75.963						
7	.564	3.316	79.279						
8	.470	2.763	82.043						
9	.442	2.598	84.641						
10	.428	2.518	87.159						
11	.400	2.353	89.512						
12	.367	2.160	91.671						
13	.325	1.912	93.584						
14	.309	1.818	95.401						
15	.301	1.772	97.173						
16	.259	1.525	98.699						
17	.221	1.301	100.000						

Extraction Method: Principal Component Analysis.

Extraction Method: Principal Component Analy

According to Table 3, it shows that the variance percentage does not exceed 50% hence it can be concluded that despite the operational items used in this study uses independent method, there is no bias in its validity construct or common method bias is not present in this study. According to the data shown in Table 3, it appears that the variance is not greater than 50% hence it can be concluded that despite operational items are used in the study using single method, no bias in construct validity is observed, or it can be said that the common method bias is absent in this study.

Regarding correlation relationship between variables through r-square test, from the data processed it can be concluded that it becomes several points, namely:

1. Ubiquitous Connectivity Affects Privacy Concern by 2.0%
2. Ubiquitous Connectivity Affects Information Transparency by 16.3%
3. Ubiquitous Connectivity Affects Information Overload by 0.7%
4. Mediation variables influence the Discontinuation Usage Intention by 15.8%.

Based on the results of Q-square calculations that have been done it can be concluded that the model has a good predictive relevant value because the Q-square value is greater than 0. It can also be concluded that this model has been well observed and mediating variables (Privacy Concern, Information Transparency, and Information Overload) have a predicted value of Discontinue Usage Intention of 3.2%.

Table 5: T-Statistics

		Original Sample (O)	t-Statistic	Result
Ubiquitous Connectivity → Privacy Concern	Hypothesis 1	0.141	3.393	Supported
Ubiquitous Connectivity → Information Transparency	Hypothesis 2	0.403	9.868	Supported
Ubiquitous Connectivity → Information Overload	Hypothesis 3	0.083	2.046	Supported
Privacy Concern → Discontinue Usage Intention	Hypothesis 4	0.104	2.714	Supported
Information Transparency → Discontinue Usage Intention	Hypothesis 5	0.020	0.497	Unsupported
Information Overload → Discontinue Usage Intention	Hypothesis 6	0.356	9.098	Supported

4.2. The Relationship of Ubiquitous Connectivity on Privacy Concern

This study states that ubiquitous connectivity has a significant effect on privacy concern with t value of 3.39.

$$Q2 = 1 - (1-R12)(1-R22)(1-R32)(1-R42)$$

$$Q2 = 1 - (1-0,0202)(1-0,1632)(1-0,0072)(1-0,1582)$$

$$Q2 = 1 - (0,999)(0,973)(0,999)(0,997)$$

$$Q2 = 0.032$$

Table 4: R-Square

Variables	R-Square
Privacy Concern	0.020
Information Transparency	0.163
Information Overload	0.007
Discontinue Usage Intention	0.158

1. The first F-Square produces values that tend to be negative. This is because the more dependent variables (Y) are studied, the smaller the results of the predictive power (Henseler, 2009). But it can be seen if the second F-Square test that focuses on the dependent variable is only 1, the results of the predictive power are positive.
2. The F-square results which tend to be negative are descriptively understood to be caused by the type of respondent in this study. Characteristics of respondents in this study have been determined in such a way from the level of knowledge level (S1, S2, and S3) as well as millennial generation so they are less predictable. This is input for further research, to take more varied samples from high school to doctoral level, as well as dividing the millennials into junior and senior millennials

This value is higher than 1.96, therefore, ubiquitous connectivity influences privacy concern. It can be concluded that the first hypothesis can be accepted. This conclusion is supported by Choi (2016) that showed that ubiquitous connectivity has an effect or increase privacy

concern on users, especially social network users of smartphone. A recent study by Gao et al. (2018) also found that there is a positive effect of ubiquitous connectivity on privacy concern according to the protection motivation theory.

4.3. The Relationship of Ubiquitous Connectivity on Information Transparency

This study found that ubiquitous connectivity has a significant effect on information transparency with t value of 9.868. This value is greater than 1.96, hence, ubiquitous connectivity influences information transparency. It can be concluded that the second hypothesis can be accepted. This conclusion is supported by Granados et al. (2010), which found that the current internet phenomenon helps users because of the vastly available information. This is further supported by Zhou et al. (2018) who stated that ubiquitous connectivity phenomenon is the one enabling user to connect and gain access great sources of information.

4.4. The Relationship of Ubiquitous Connectivity on Information Overload

This study found that ubiquitous connectivity has a significant effect on information overload with t value of 2.046. This value is greater than 1.96, hence ubiquitous connectivity influences information overload. It can be concluded that the third hypothesis can be accepted. This conclusion is supporting findings by Gao et al. (2018) who found that ubiquitous connectivity has a positive effect on information overload and can be said that information overload creates SNS exhaustion. This is also supported by Swar et al. (2017) who also state that information overload comes from the ubiquitous connectivity phenomenon that gives much information that may not be used, causing the user having difficulty to process the received information. Consequently, there is a negative psychological reaction.

4.5. The Relationship of Privacy Concern on Discontinue Usage Intention

This study states that privacy concern significantly affects discontinue usage intention with t value of 2.714. This value is greater than 1.96, hence it can be concluded that the fourth hypothesis can be accepted. This finding is supported by Gao et al. (2018) in their study that did not find a direct significant effect from privacy concern on discontinue usage intention without the protection motivation variable. This suggests that users must experience fear of privacy concern effect first, thus triggering discontinue usage intention behavior. According to Akhter (2012), privacy concern inhibits decision or reduces consumers' online transaction. This is in line with

the discontinue usage intention characteristics, whereby user reduces their usage of certain online platform.

4.6. The Relationship of Information Transparency on Discontinue Usage Intention

This study found that information transparency does not significantly effect on discontinue usage intention, where t value is 0.497. This value is less than 1.96 hence information transparency does not influence discontinue usage intention. It can be concluded that the fifth hypothesis is rejected. It can be assumed that based on the information processing theory, the millennial generation benefits from encountering information transparency in e-commerce and it does not prevent them from using online shopping. Zhou et al. (2018) assumed that the research finding was not significant due to the many online shop that have varied level of transparency.

4.7. The Relationship of Information Overload on Discontinue Usage Intention

This study found that information overload has significant effect on discontinue usage intention with t value of 9.098. This value is greater than 1.96, hence, information overload has a significant influence on discontinue usage intention. It can be concluded that the sixth hypothesis is accepted. This is supported by Gao et al. (2012) study that explained the information overload phenomenon in the context of online shop. Information that is stated includes product information provided by stockist, online review, and others. It is clear that the amount of information outside the customer's ability to process could cause information overload. Having inconsistent product variety and services between web sites or other issues can cause negative emotions, such as exhaustion and worry in customers and it will impact on the subjectivity of their purchase decision. This is further supported by Gao et al. (2018) who suggested that information overload indirectly affect discontinue usage intention. This is explained by the effect factor from information overload, which is exhaustion or tiredness from accessing digital information is important in mediating information overload and ubiquitous connectivity.

4.8. Managerial and Theoretical Implication

Based on the results, this study can provide knowledge and insight on online business doers or e-commerce, especially Tokopedia to grow their business by knowing the factors affecting consumer behavior when shopping online. It means that e-commerce business can plan and implement accurate marketing strategy and use it to avoid consumers from discontinue usage intention. The research

finding shows that privacy concern influences discontinue usage intention online platform. Therefore, this finding can be a suggestion to e-commerce business, especially Tokopedia to be more attentive to terms and conditions regarding privacy. Privacy encompasses how e-commerce companies use personal data and information of online shop users to convince users that their private user information is secure and will not be misused.

The second issue that needs to be considered is the information overload that also affects discontinue usage intention. This can be a suggestion to manage the amount of information that is displayed on the e-commerce page. Even if the user is unaware that they are experiencing information overload, the number of brands and attributes available in e-commerce is incredibly high and can easily confuse them when making purchase decision. The result also showed that ubiquitous connectivity influences information transparency, however, it does not cause discontinue usage intention. This can be a suggestion to maintain the service or the availability of information given by e-commerce marketplace to the user. However, the presentation of each online shop user's character is certainly different, hence, e-commerce business need to differentiate how information is displayed to various users.

Meanwhile, the implication on theoretical grounds is that this study is a new perspective that explains that despite the phenomenon above, the millennial generation especially are not entirely concerned about the privacy concern, however, this study clearly shows that the privacy issue in the digital world continues to be something that needs to be cared for, moreover this study confirms the issue of information overload and information transparency in the digital world.

4.9. Limitation and Future Research

The limitation of this study is that the researcher is focused on using only one theory to explain the phenomenon as a whole, this causes a lack of deep discussion for some variables, for example when discussing about privacy concern, researchers did not explore in depth about how coping behavior from respondents has different level of cognition. Other than that, this study did not focus on the dimensions of information transparency variable, hence this study did not emphasize about which information that is more required in the e-commerce world, is it product transparency, transaction transparency or vendor transparency. There are some suggestions for future research exploring a more in-depth research on protection motivation theory and information processing theory. Focusing on protection motivation theory, there is a perspective that is yet to be explored such as privacy fear. Meanwhile, in information processing

theory, other researchers can deepen the information overload parameter in terms of what brands and attributes affect online shop users. Not only that, other researchers can also further explore the forms and the conditions at which information overload could affect. Other suggestions for future research to explore deeper, specifically geographical area, general education, as well as types of millennial respondents to obtain detailed user characteristics. In this study, the relationship between variables still has a small effect on discontinue usage intention, hence a suggestion for future research is to further explore other variables that are assumed to have an effect.

5. Conclusions and Suggestion

Based on the results and discussion conducted in this study, it can be concluded that the Protection Motivation Theory do occur in the millennial generation in Indonesia in the context of Ubiquitous Connectivity, Privacy Concern, and Discontinue Usage Intention in the online shop. It is found that the millennial generation in Indonesia, which is included in the characteristics of digital voyagers, has the characteristics of: low risk perception, low alertness in sharing data, and low risk avoidance. This makes the millennial generation tend to have privacy concerns, especially in the online shop aspect in protecting the personal information of their customers. From the Information Processing Theory, it can be concluded that the millennial generation has a high cognitive in processing information in e-commerce, so that the millennial has a tendency not to feel Information Overload in descriptive research. But, the millennial generation can feel bored or fatigued due to the large amount of information in the form of brands and attributes, causing Discontinue Usage Intention. It can be concluded that when examining the Protection Motivation Theory and Information Processing Theory, one must pay attention to the different points of view. Differences in viewpoints that occur in this study are between juniors and senior millennials. This resulted in the insignificance of the information transparency variable on discontinue usage intention, so this is a suggestion in this study.

References

- Akhter, S. H. (2012). Who Spends More Online? The Influence of Time, Usage Variety, and Privacy Concern on Online Spending. *Journal of Retailing and Consumer Services*, 19(1), 109-115. <https://doi.org/10.1016/J.Jretconser.2011.10.002>
- Agustina, D., Najib, M. & Suharjo, B. (2016). Pengaruh

- Personalisasi Iklan Online Terhadap Sikap dan Minat Beli Konsumen. *MIX: Jurnal Ilmiah Manajemen*, 6(3), 367-386
- Atkinson, R. C., & Shiffrin, R. M. (1968). Human Memory: A Proposed System and Its Control Processes. *The Psychology of Learning and Motivation*, 2, 89-195.
- Chen, J. V., Tran, A., & Nguyen, T. (2019). Understanding the Discontinuance Behavior of Mobile Shoppers as A Consequence of Technostress: An Application of the Stress-Coping Theory. *Computers in Human Behavior*, 95, 83-93. <https://doi.org/10.1016/j.chb.2019.01.022>
- Choi, S. (2016). The Flipside of Ubiquitous Connectivity Enabled by Smartphone-Based Social Networking Service: Social Presence and Privacy Concern. *Computers in Human Behavior*, 65, 325-333. <https://doi.org/10.1016/j.chb.2016.08.039>
- Eppler, M. J., & Mengis, J. (2004). The Concept of Information Overload: A Review of Literature from Organization Science, Accounting, Marketing, MIS, and Related Disciplines. *The Information Society*, 20(5), 325-344. <https://doi.org/10.1080/01972240490507974>
- Furner, C. P., & Zinko, R. A. (2016). The Influence of Information Overload on the Development of Trust and Purchase Intention Based on Online Product Reviews in a Mobile Vs. Web Environment: An Empirical Investigation. *Electronic Markets*, 27(3), 211-224. <https://doi.org/10.1007/s12525-016-0233-2>
- Gao, J., Zhang, C., Wang, K. & Ba, S. (2012). Understanding Online Purchase Decision Making: The Effects of Unconscious Thought, Information Quality, and Information Quantity. *Decision Support Systems*, 53(4), 772-781. <https://doi.org/10.1016/j.dss.2012.05.011>
- Gao, W., Liu, Z., Guo, Q., & Li, X. (2018). The Dark Side of Ubiquitous Connectivity in Smartphone-Based SNS: An Integrated Model from Information Perspective. *Computers in Human Behavior*, 84, 185-193. <https://doi.org/10.1016/j.chb.2018.02.023>
- Granados, N., Gupta, A., & Kauffman, R. J. (2010). Research Commentary Information Transparency in Business-to-Consumer Markets: Concepts, Framework and Research Agenda. *Information Systems Research*, 21(2), 207-226. <https://doi.org/10.1287/isre.1090.0249>
- Hair, J. J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2017). *Multivariate Data Analysis* (7th Edition). London, United Kingdom: Pearson Education Limited.
- Hanna, R. C., Lemon, K. N., & Smith, G. E. (2019). Is Transparency a Good Thing? How Online Price Transparency and Variability Can Benefit Firms and Influence Consumer Decision Making. *Business Horizons*, 62(2), 227-236. <https://doi.org/10.1016/j.bushor.2018.11.006>
- Henseler, J. (2009). *The Use of Partial Least Squares Path Modeling in International Marketing*. Bingley, England Emerald JAI Press.
- Hong, W., & Thong, J. Y.L. (2013). Internet Privacy Concerns: An Integrated Conceptualization and Four Empirical Studies. *Forthcoming in MIS Quarterly*, 37(1), 275-298. <https://doi.org/10.25300/MISQ/2013/37.1.12>
- Huang, C. D., Goo, J., Nam, K., & Yoo, C. W. (2017). Smart Tourism Technologies in Travel Planning: The Role of Exploration and Exploitation. *Information & Management*, 54(6), 757-770. <https://doi.org/10.1016/j.im.2016.11.010>
- Jacoby, J., Speller, D. E., & Berning, C. K. (1974). Brand Choice Behavior as A Function of Information Load: Replication and Extension. *Journal of Consumer Research*, 1(1), 33-42. <https://doi.org/10.1086/208579>
- Jung, M. J., Naughton, J. P., Tahoun, A., & Wang, C. (2017). Do Firms Strategically Disseminate? Evidence from Corporate Use of Social Media. *The Accounting Review*, 93(4), 225-252. <https://doi.org/10.2308/accr-51906>
- Larose, R. & Rifon, N. J. (2007). Promoting i-Safety: Effects of Privacy Warnings and Privacy Seals on Risk Assessment and Online Privacy Behavior. *The Journal of Consumer Affairs*, 41(1), 127-149. <https://www.jstor.org/stable/23860017>
- Lee, S. K., Lindsey, N. J., & Kim, K. S. (2017). The Effects of News Consumption via Social Media and News Information Overload on Perceptions of Journalistic Norms and Practices. *Computers in Human Behavior*, 75, 254-263. <https://doi.org/10.1016/j.chb.2017.05.007>
- Lee, Y.-K., Park, J.-H., Chung, N., & Blakeney, A. (2012). A Unified Perspective on the Factors Influencing Usage Intention toward Mobile Financial Services. *Journal of Business Research*, 65(11), 1590-1599. <https://doi.org/10.1016/j.jbusres.2011.02.044>
- Li, C.-Y. (2016). Why Do Online Consumers Experience Information Overload? An Extension of Communication Theory. *Journal of Information Science*, 43(6), 835-851. <https://doi.org/10.1177/0165551516670096>
- Lucian, R., & De Farias, S. A. (2009). Effects of Information Overload on Brazilian E-Consumers. *American Journal of Economics and Business Administration*, 1(1), 21-26.
- Luqman, A., Cao, X., Ali, A., Masood, A., & Yu, L. (2017). Empirical Investigation of Facebook Discontinues Usage Intentions Based on SOR Paradigm. *Computers in Human Behavior*, 70, 544-555. <https://doi.org/10.1016/j.chb.2017.01.020>
- Lwin, M. O., Wirtz, J., & Stanaland, A. J. S. (2016). The Privacy Dyad. *Internet Research*, 26(4), 919-941. <https://doi.org/10.1108/Intr-05-2014-0134>
- Malhotra N. K. (2010). *Marketing Research: An Applied Orientation* (6th Edition). Atlanta, GA: Georgia Institute of Technology
- Mittal, D., & Agrawal, S. R. (2016). Price Transparency Reflects Assurance and Reliability. *Journal of Retailing and Consumer Services*, 31(C), 43-51. <https://doi.org/10.1016/j.jretconser.2016.03.004>
- Nagar, K., & Gandotra, P. (2016). Exploring Choice Overload, Internet Shopping Anxiety, Variety Seeking and Online Shopping Adoption Relationship: Evidence from Online Fashion Stores. *Global Business Review*, 17(4), 851-869. <https://doi.org/10.1177/0972150916645682>
- Pappas, I., Kourouthanassis, P. E., & Giannakos, M. (2016). Sense And Sensibility In Personalized e-Commerce: How Emotions Rebalance the Purchase Intentions of Persuaded Customers. *Psychology and Marketing*, 34(10), 972-986. <https://doi.org/10.1002/mar.21036>
- Pavlou, P. A. (2003). Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*, 7(3), 101-134.

- <https://doi.org/10.1080/10864415.2003.11044275>
- Pavlou, P. A., & Sawy, O. E. (2006). From IT Leveraging Competence to Competitive Advantage in Turbulent Environments: The Case of New Product Development. *Information Systems Research*, 17(3), 198-227. <https://doi.org/10.1287/isre.1060.0094>
- Roetzel, P. G. (2018). Information Overload in the Information Age: A Review of the Literature from Business Administration, Business Psychology, and Related Disciplines with a Bibliometric Approach and Framework Development. *Business Research*, 12(2), 479-522. <https://doi.org/10.1007/S40685-018-0069-Z>
- Rogers, R. W. (1975). A Protection Motivation Theory of Fear Appeals and Attitude Change. *J Psychol*, 91(1), 93-114. <https://doi.org/10.1080/00223980.1975.9915803>
- Setiyaningrum, A., & Hidayat, H. (2016). Service Quality dan Kepuasan Konsumen: Studi Empiris dan Implikasinya pada Toko Online. *MIX: Jurnal Ilmiah Manajemen*, 6(2), 247-260. DOI: 10.22441/jurnal_mix
- Sekaran, U., & Bougie, R. (2010). *Research Methods for Business: A Skill Building Approach* (5th Ed). Hoboken, NJ: John Wiley & Sons
- Simangunsong, E. (2018). Generation-Z Buying Behaviour in Indonesia: Opportunities for Retail Business. *MIX: Jurnal Ilmiah Manajemen*, 8(2), 243-253. DOI: 10.22441/jurnal_mix
- Acosta, P. S., Castillo, F. J. M., Nicolas, C. L., & Palacios, R. C. (2014). The Effect of Information Overload and Disorganization on Intention to Purchase Online. *Online Information Review*, 38(4), 543-561. <https://doi.org/10.1108/Oir-01-2014-0008>
- Stohl, C., Stohl, M., & Leonardi, P. M. (2016). Managing Opacity: Information Visibility and the Paradox of Transparency in the Digital Age. *International Journal of Communication*, 10, 123-137.
- Swar, B., Hameed, T., & Reyhav, I. (2017). Information Overload, Psychological Ill-Being, and Behavioral Intention to Continue Online Healthcare Information Search. *Computers in Human Behavior*, 70, 416-425. <https://doi.org/10.1016/J.Chb.2016.12.068>
- Teofilus, T., & Ng, S. (2017). Analisis Pengaruh Variabel Antisedan dari Impulse Buying (Studi Empiris pada Giant Ekstra Jatiasih). *Jurnal Manajemen Teori Dan Terapan*, 10(1), 21-36.
- Teofilus, T., Sutrisno, T. F. C. W., & Gomuljo, A. (2019). The Elements of Packaging that Form A Brand Personality. (Study In Aroma Premium Sekoteng Products). *MIX: Jurnal Ilmiah Manajemen*, 9(2), 382-393. <https://doi.org/10.22441/Mix.2019.V9i2.010>
- Teofilus, T., Singh, S. K., Sutrisno, T. F. C. W., & Kurniawan, A. (2020). Analyzing Entrepreneurial Marketing on Innovative Performance. *Mix: Jurnal Ilmiah Manajemen*, 10(1), 78-90. <https://doi.org/10.22441/Mix.2020.V10i1.006>
- Tsai, H.-Y. S., Jiang, M., Alhabash, S., Larose, R., Rifon, N. J., & Cotten, S. R. (2016). Understanding Online Safety Behaviors: A Protection Motivation Theory Perspective. *Computers & Security*, 59, 138-150. <https://doi.org/10.1016/J.Cose.2016.02.009>
- Vania A., Sumiati, S. & Rohman, F. (2018). Preferensi Pelanggan Online Shop Instagram Berdasarkan E-Service Quality Dengan Menggunakan Analisis Cluster dan Analisis Conjoint. *MIX: Jurnal Ilmiah Manajemen*, 8(1), 73-89. <http://dx.doi.org/10.22441/mix.2018.v8i1.005>
- Weinberg, B. D., Milne, G. R., Andonova, Y. G., & Hajjat, F. M. (2015). Internet of Things: Convenience vs. Privacy and Secrecy. *Business Horizons*, 58(6), 615-624. <https://doi.org/10.1016/J.Bushor.2015.06.005>
- Wilkie, W. (1974). Analysis of Effects of Information Load. *Journal of Marketing Research*, 11(4), 426-466. <https://doi.org/10.1177/002224377401100414>
- Yang, S., Li, T. & Heck, E. V. (2015). Information Transparency in Prediction Markets. *Decision Support Systems*, 78, 67-79. DOI: 10.1016/J.Dss.2015.05.009
- Youn, S. (2009). Determinants of Online Privacy Concern and Its Influence on Privacy Protection Behaviors among Young Adolescents. *Journal of Consumer Affairs* 43(3), 389-418. <https://doi.org/10.1111/j.1745-6606.2009.01146.x>
- Zhang, S., Zhao, L., Lu, Y., & Yang, J. (2016). Do You Get Tired of Socializing? An Empirical Explanation of Discontinuous Usage Behaviour in Social Network Services. *Information & Management*, 53(7), 904-914. <https://doi.org/10.1016/J.Im.2016.03.006>
- Zhou, L., Wang, W., Xu, J., Liu, T., & Gu, J. (2018). Perceived Information Transparency in B2C E-Commerce: An Empirical Investigation. *Information & Management*, 55(7), 912-927. <https://doi.org/10.1016/J.Im.2018.04.005>
- Zhu, K. (2002). Information Transparency in Electronic Marketplaces: Why Data Transparency May Hinder the Adoption of B2B Exchanges. *Electronic Markets*, 12(2), 92-99. <https://doi.org/10.1080/10196780252844535>