Analysis of Webrooming Behavioral Intentions on Smartphone Products in Indonesia: A Case Study of the Millennial Generation

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Abstract

The advancement and rapid development of technology has led to a transformation in the retail industry and has also revolutionized the shopping channels available in the market to realize consumer variety in information seeking, product comparison, and buying behavior. In this phenomenon, consumers have shown a pattern of using combined shopping channels. For example, consumers exhibit showrooming behavior when they visit a physical store looking for product information but end up buying online. The concept of webrooming can be expanded as a form of omnichannel shopping where consumers search for information online before going to a physical store to make a purchase and also access the internet while in a physical store to look for information. Smartphones are one of the electronic products that consumers in Indonesia are looking for information on online. The purpose of this study is to analyze the factors that influence the intention of the millennial generation in Indonesia to do webrooming on the purchase of smartphone products. The model used in this study is a combination model of three studies that describe the factors that influence the intention to do webrooming with a total of 18 hypotheses. The method used is structural equation modeling (PLS-SEM) and the number of respondents is 255 respondents. The results of this study show that lower search costs, access to online reviews, perceived availability of salespeople, and touch and feel experience have a positive and significant relationship with intention to do webrooming.

Keywords
Millennial Generation, Omnichannel, PLS-SEM, Webrooming

1. Introduction

Advances and rapid technological developments have led to a transformation in the retail industry (Cheng-Xi, Basha, Imm, & Ho, 2021). With the development of the internet as well, it has revolutionized the shopping channels available in the market to realize consumer variations in information seeking, product comparison, and buying behavior (Nam & Kannan, 2020). This phenomenon has occurred in Indonesia, although the current presence of e-commerce does not completely solve the problem even though it is considered efficient (CNBC INDONESIA, 2019). As evidenced by the results, 97% of consumers plan shopping before going to a retail store. Around 93% of them are regular users of the device to search for prices and products online (Digital & Technology, 2016). In this phenomenon, consumers have shown a pattern of using combined shopping channels. For example, consumers exhibit showrooming behavior when they visit a physical store looking for product information, but end up buying online. As an alternative, consumers also search for product information online, only to make the final purchase step at a physical store, which is commonly referred to as webrooming (Cheng-Xi, Basha, Imm, & Ho, 2021).

The term webrooming is defined as a two-stage decision-making process (Flavian, Gurrea, & Orus, 2019). Webrooming involves a buying process with a choice phase which is divided into two stages. In the first stage, consumers find on the internet an alternative that may best suit their shopping needs or goals, but a lack of trust prevents online purchases. The second stage, consumers confirm information in physical stores (offline) and make purchases (Carlos, Gurrea, & Sergio, 2019). In addition, it has been found that 69% of smartphone users aged 18-36 years have engaged in webrooming behavior (Nielson, 2016). An interesting phenomenon was found in research (Hall, Towers, & Shaw, 2017) which stated that young consumers or buyers at a young age, especially millennials, were described as very digitally literate. This phenomenon is expected to make young consumers more interested and comfortable using the internet to complete the entire purchasing journey (Hall, Towers, & Shaw, 2017). In Indonesia, the customers with the largest population with productive age are shown by generation Y (millennial generation) who were born between 1980 and 2000 or are around 19 years old to 39 years old. namely as much as 33.75 percent, then followed by generation Z as much as 29.23%, generation X as much as 25.74%, and the baby boom generation and veterans as much as 11.27% (BPS, 2018).

1.1 Objectives

Based on the background above, there are several objectives to be achieved in this research. The first objective to be achieved in this study is to analyze the characteristics of the millennial generation of smartphone product users in Indonesia who engage in webrooming behavior to purchase smartphone products. Second, to analyze the factors that influence the intention to do webrooming in the millennial generation in Indonesia. Third, I want to formulate managerial recommendations to offline smartphone retail stores in Indonesia in order to formulate strategies that can increase sales

2. Literature Review

2.1 *Webrooming*

Webrooming is cited as the most widespread cross-channel behavior in the retail industry (Flavian, Gurrea, & Orus, 2016). Webrooming is also referred to as multichannel shopping (Burke, 2002), cross-channel shopping (Heitz, 2013), and research shopping (Verhoef, Kannan, & Inman, 2015). Webrooming involves a buying process with the buying phase being divided into two stages. In the first stage, consumers find on the internet an alternative that may best suit their needs or shopping goals. In the second stage, consumers confirm information in physical stores and make purchases (Flavian, Gurrea, & Orus, 2019).

The concept of webrooming can thus be extended as a form of omnichannel shopping, where consumers search for information online before going to a physical store to make a purchase and also access the internet while in a physical store looking for information (Rippe, Weisfeld-Spolter, Yurova, Dubinsky, & Hale, 2017). In Kang's research (2018), it is stated that the need for information achievement, social interaction, and various searches motivate consumers to do webrooming, while visiting online stores allows consumers to access and use reviews to make better decisions. In addition, research (Verhoef, Kannan, & Inman, 2015) argues that the risks associated with online purchases encourage consumers to go to physical stores to buy products after collecting information online. This is in accordance with the findings of a study conducted by (Chiu, Hsieh, Roan, Tseng, & Hsieh, 2011) that the need for touch motivates consumers to buy offline. In addition to the motivations described above that can encourage consumer behavior to do webrooming, research conducted by (Santos & Goncalves, 2019) found three information processing integrations

(information achievement, price comparisons, and empowerment), as well as two uncertainty reduction motivations (perceived risk, self-confidence) as a driver of webrooming behavior.

2.2 *Perceived Availability of Salespeople*

Buyers prefer salespeople to always be available when buyers experience problems during the shopping process (Sharma & Stafford, 2000). The availability of in-store salespeople can affect the length of time a shopper perceives to seek help. Difficulties in ensuring the availability of salespeople in stores, not only have a negative impact but also risk diverting buyers to competitors (Haas & Kenning, 2014). On the other hand, research (Collier, Moore, Horky, & Moore, 2015) explains that the availability of employees in supermarkets provides consumers with assistance that can increase shopping effectiveness. Waiting for help is very distracting for consumers in the process of finding a product to buy (Dube-Rioux, Schmitt, & Leclerc, 1989). This is clearly seen if the online shopping channel buyers cannot immediately get a fast response when asking something. Therefore, shoppers may leave the online channel of shopping and will switch to physical stores where salespeople are available.

H1: perceived availability of sales people has a positive effect on the intention to do webrooming

2.3 *Immediate Possession*

Buyers are motivated to study shopping channels in order to get the benefits they get when making a purchase. Direct ownership is one of the benefits provided in webrooming behavior (Rohm & Swaminathan, 2004). Product delivery times differ significantly across shopping channels because channels have different levels of capability when it comes to product delivery (Noble, Griffith, & Weinberger, 2005). Buyers certainly prefer direct or instant product delivery, and they visit physical stores solely for this reason (Rohm & Swaminathan, 2004). It has been proven that the satisfaction of direct or instant product delivery is expected by buyers for urgent needs (Barbopoulus & Johansson, 2016). Therefore, it is believed that buyers tend to seek immediate or instant ownership, and thus compel buyers to do webrooming.

H2: immediate possession has a positive effect on the intention to do webrooming

2.4 *Offline Purchase Effort*

Offline purchasing effort in the context of this study is defined as the costs incurred such as perceived effort and time when buyers buy products through offline channels (Eugene C. X.-A., 2019). Although time and effort are two different things, they are often disputed in a marketing context. In other words, visiting physical stores takes more time and effort when compared to shopping through online channels (Lala & Chakraborty, 2015). Travel costs are indicated as a factor in determining the shopping format (Bell, Ho, & Tang, 1998). In research by Juaneda-Ayensa, Mosquera, & Sierra (2016), it is stated that business expectations are positively related to purchase intentions on omnichannel channels. Therefore, it can be assumed that when offline purchase efforts are high, shoppers can continue the online shopping process instead of switching to offline channels to make purchases.

H3: Offline purchase effort has a positive effect on the intention to do webbroming

2.5 *Variety Seeking*

In a study (Michaelidou, Arnott, & Dibb, 2005) stated that the search for diversity affects shopping channels. Variety seeking is the tendency of individuals to seek different products or services (Baltas, Kokkinaki, & Loukopoulou, 2017). It has been shown that online channels offer more comprehensive product categories compared to physical stores which encourage shoppers to search for products online first before heading to physical stores (Kang, 2018). In the context of retail shopping channels, shoppers seeking variety or diversity tend to switch shopping channels to reach a wider range of products (Konus & Verhoef, 2008). Cross-channel shopping allows variety seekers to obtain broader product information than single-channel shopping (Hsiao, Yen, & Li, 2012). Therefore, motivated shoppers seeking variety or diversity tend to use multiple shopping channels.

H4: Variety seeking has a positive effect on intention to do webrooming

2.6 *Access to Online Reviews*

Online reviews refer to the information shared by potential customers regarding a product or company through publicly available online platforms (Henning, Gwinner, Walsh, & Gremler, 2004). Online reviews provide information

about product functionality which reduces uncertainty about product performance (Cui, Lui, & Guo, 2012). Hence, consumers visit different online platforms to collect product-related information, enabling consumers to make informed purchasing decisions (Lee & Ma, 2012). In addition, consumers also interact with existing consumers who have shared reviews to get more information about product performance (Flavian, Gurrea, & Orus, 2016). Consumers find online reviews to be more trustworthy than information shared by marketers because reviews are shared by existing and experienced users (Santos & Goncalves, 2019). Thus, access to online reviews can be an important condition of intention to do webrooming.

H5: Access to online reviews has a positive effect on intention to do webrooming

2.7 *Better Assortment*

Product assortment or product diversity refers to the availability of various goods in terms of quality, quantity, and brand choice (Verhoef, Kannan, & Inman, 2015). Online sellers can use online catalogs to showcase the breadth and depth of products and services (Islam, Jebarajakirthy, & Shankar, 2019). In addition, online shoppers can display a wide variety of products in terms of color, size, and design (Kang, 2018). Online sellers can also show brands of similar products as well as complementary products to increase customer choice (Goraya, et al., 2020). Product assortment or product diversity can play an important role in consumer channel choice during the buying process (Verhoef, Kannan, & Inman, 2015). Through online platforms, consumers can receive better choices, saving time, money and effort in evaluating products that are difficult to obtain offline in stores (Rubio, Villasenor, & Yague, 2017).

H6: Better assortment has a positive effect on intention to do webrooming

2.8 *Lower Search Cost*

Search costs refer to the time, money, and effort required to search for information related to a product or service (Noble, Griffith, & Weinberger, 2005). Online platforms provide a large amount of information about products and allow customers to access information at a lower cost when compared to offline stores (Carlton & Chevalier, 2001). If consumers need to access product information from a physical store, consumers need to visit the store physically, which incurs costs for consumers and requires time and effort (Jepsen, 2007). Whereas consumers can receive limited information in offline stores, by having to visit different offline stores to collect information that requires a lot of manpower and resources. Therefore, consumers prefer to use online platforms to find information.

H7: Lower search cost has a positive effect on intention to do webrooming

2.9 *Touch and Feel Experience*

The experience of touching and feeling the product is the main motivation to buy products from offline stores (Mehra, Kumar, & Raju, 2013). In the context of online purchases, customers do not have the opportunity to touch and feel the product, therefore they have uncertainty about product attributes such as product color, product quality, and product size (Peck & Childers, 2006). However, when buying through a physical store, consumers can physically examine product attributes which give them confidence about the attributes of the product to be purchased (Peck & Childers, 2006). Sometimes a product that looks suitable when an online purchase is made, consumers are not very satisfied after getting it which leads to regret (Cheng-Xi, Basha, Imm, & Ho, 2021).

H8: Touch and feel experience has a positive effect on intention to do webrooming

2.10 *Socialization*

The opportunity to interact with friends and family members is one of the motivations for consumers to make purchases offline at physical stores (Rohm & Swaminathan, 2004). Consumers expect socializing benefits during shopping such as spending quality time with friends and family members. In addition, consumers also seek advice from them to help each consumer in purchasing decisions (Arora & Sahney, 2019). This form of socialization encourages consumers to buy offline after searching for products online, thus triggering the intention to do webrooming.

H9: Socialization has a positive effect on intentions to do webrooming

3. Methods

Partial Least Square-Structural Equation Modeling or PLS-SEM is used to deal with research that has a smaller sample size (Marcoulides & Saunders, 2006). PLS-SEM has the advantage of being sensitive to relatively few data (Hair, Black, Babin, & Anderson, 2013) when compared to Covariance Based-SEM (CB-SEM) which aims to confirm research with a tested model. PLS-SEM is a Variance Based-SEM (VB-SEM) that can be used for research models that require formative properties to form a latent variable (Sholiha & Salamah, 2015). Figure 1 shows the conceptual model used in this research.

4. Data Collection

The type of research used in this research is conclusive-descriptive. In this study, the target population will be the millennial generation who carry out webrooming behavior to purchase smartphones in Indonesia. The number of samples to be tested is using the rules of thumb method by multiplying the number of indicator variables multiplied by 5 to 10 to be used as a reference for the sample or questionnaire to be taken and distributed (Hair, Black, Babin, & Anderson, 2013). The indicator variables used in this study were 57 which would be multiplied by 5, so that the number of samples in this study was 285 respondents. The criteria for respondents in this study are the millennial generation in Indonesia who carry out webrooming behavior to purchase smartphone products.

In this study there are 9 independent variables and one dependent variable with a total of 28 indicator variables. This study uses purposive sampling technique because this method seeks to obtain a sample of elements that are comfortable for the researcher. Obtaining data in this study obtained from a survey by distributing questionnaires to respondents and filled in by the respondents themselves or what is called a self-administered questionnaire. (Figure 1)

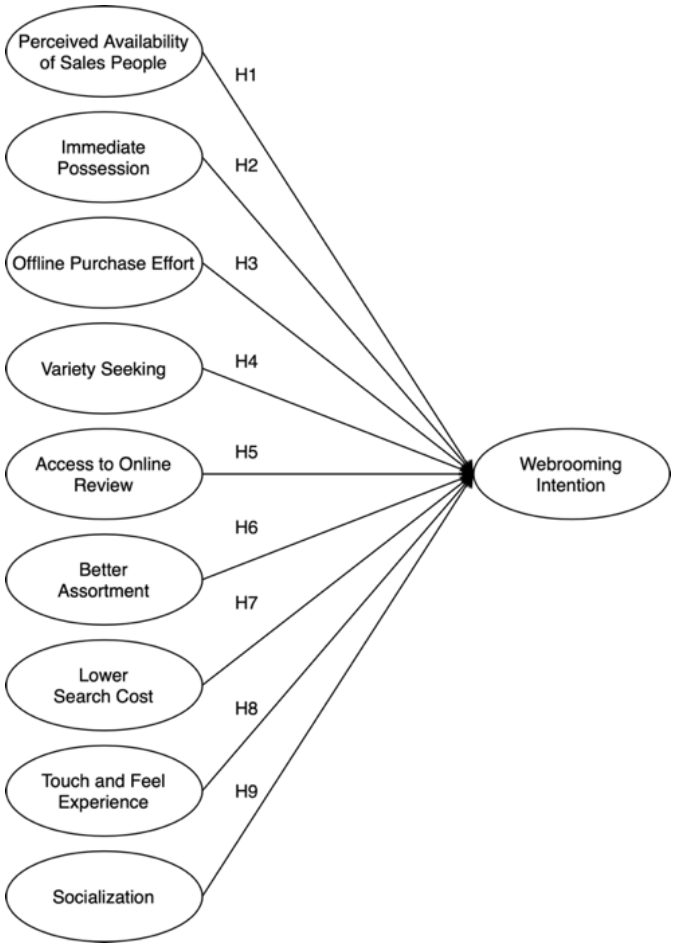

Figure 1 The Conceptual Model

4.1 Structural Model

According to Hair, Hollingsworth, Randolph, & Chong (2017), the structural model has the aim of knowing the relationship between variables in a model. The evaluation criteria for the structural model include path coefficients, coefficient of determination, effect size, and predictive relevance. The following are the assessment criteria used in the structural model. In PLS-SEM it can be seen that the goodness of fit (GoF) or goodness of this research model aims to find out that the model contained in this study is feasible and can explain the reality that occurs through the factors that have been compiled. PLS-SEM does not use GoF as a reference in determining model fit, in contrast to CB-SEM (Hair, Hollingsworth, Randolph, & Chong, 2017). The formula for calculating GoF can use the basis of the Average Variance Extracted (AVE) and the mean (Wetzels, Odekerken, & Oppen, 2009). This study also uses the Standardized Root Mean Square Residual (SRMR) as a measurement of model fit. For path coefficients can be measured through the relationship between latent variables. If the value is close to +1 then it can be assumed to have a positive relationship, otherwise if it is close to -1 then it can be assumed to have a negative relationship.

4.2 Measurement Model

The measurement model or outer model is used to measure the relationship between latent variables and their attributes.(Table 1) There are three measurement models, namely internal consistency, convergent validity, and discriminant validity. Internal consistency testing using cronbach's alpha and composite reliability. If the indicator group that measures the latent variable has Cronbach's alpha value 0.7 and composite reliability 0.7, then the indicator group can be said to have passed or is feasible. Then for convergent validity, it is measured by looking at the value of outer loadings and average variance extract. If the value of outer loadings is 0.5 but still 0.7 then it can still be maintained if it does not affect the results of average variance extracted and composite reliability. Furthermore, for discriminant validity using the heterotrait-monotrait ratio (HTMT), if the value of HTMT < 0.9 then the construct passed the discriminant test.

Table 1. Measurement Model

Construct	**AVE**	**Indicators**	***Outer Loadings***	***CR***	***Cronbach's Alpha***
Perceived of Salespeople	0,570	PS1	0,883	0,792	0,664
		PS2	0,804		
		PS3	0,533		
Immediate Possession	0,753	IP1	0,844	0,901	0,836
		IP2	0,921		
		IP3	0,835		

Table 1. Measurement Model (continue)

Construct	**AVE**	**Indicators**	**Outer Loadings**	**CR**	**Cronbach's Alpha**
Touch Feel Experience	0,769	TF1	0,831	0,909	0,849
		TF2	0,863		
		TF3	0,934		
Socialization	0,716	S1	0,868	0,883	0,800
		S2	0,892		
		S3	0,772		
Offline Purchase Effort	0,724	OE1	0,930	0,885	0,870
		OE2	0,931		
		OE3	0,664		
Variety Seeking	0,858	EL1	0,895	0,923	0,841
		EL2	0,956		
Access to Online Reviews	0,815	OR1	0,929	0,929	0,886
		OR2	0,893		
		OR3	0,885		
Better Assortment	0,845	BA1	0,923	0,916	0,816
		BA2	0,915		

Lower Search Cost	0,508	LC1 LC2 LC3	0,544 0,587 0,940	0,744	0,697
Webrooming Intention	0,836	WI1 WI2 WI3	0,930 0,920 0,893	0,939	0,902

5. Results and Discussion

The results of this study indicate that the two analyzes used are descriptive analysis of demographics and use and analysis of PLS-SEM. The results of the demographic analysis can be seen in Table 2 which shows the demographics and use of respondents, namely the millennial generation in Indonesia to do webrooming on the purchase of smartphone products.

Table 2. Results and Discussion

Gender	**Total**	**Percentage (%)**
Man	128	50.2
Woman	127	49.8
Total	**255**	**100**
Occupation		
Private sector employee	80	31.37
Student	123	48.24
State-owned company employee	8	3.14
Government employees	10	3.92
Business owner	16	6.27
Other	18	7.06
Total	**255**	**100**
Monthly Income		
< Rp 1.000.000	78	76,3
Rp 1.000.000 – Rp 3.000.000	52	9,5
Rp 3.000.000 – Rp 6.000.000	76	14,2
>Rp 6.000.000	49	
Total	**255**	**100**
Willingness to Buy Smartphone at Offline Store	**Total**	**Percentage (%)**
< Rp 3.000.000	55	18,4
Rp 3.000.000 – Rp 6.000.000	101	46,7
Rp 6.000.000 – Rp 9.000.000	48	12,4
>Rp 9.000.000	51	22,5
Total	**255**	**100**
Smartphone Brands Purchased Through Offline Stores		
Apple	102	18,4
Infinix	4	37,3
Oppo	31	12,4
Realme	3	31,9
Redmi	1	
Samsung	70	
Vivo	8	
Xiaomi	36	
Total	**255**	**100**
The Last Time to Purchase a Smartphone at the Offline Store		
1-3 months	41	42,6
4–6 months	29	57,4
> 6 months	185	
Total	255	100

Furthermore, for the PLS-SEM analysis in this study, it shows that of the 9 hypotheses formulated, there are 4 hypotheses which have a positive and significant effect on the intention to do webrooming. The hypotheses that have a positive and significant effect on the intention to do webrooming are lower search costs, access to online reviews, touch and feel experience, and perceived availability of salespeople.

First, the findings from the PLS-SEM analysis show that lower search costs have a positive and significant effect on intentions to do webrooming on smartphone product purchases. Lower search cost refers to the time, money, and effort required to search for information related to a product (Noble, Griffith, & Weinberger, 2005). This is in accordance with research conducted by (Shankar, 2018) which states that online platforms provide a more comprehensive infrastructure than physical stores. Although searching for information related to a product can be done at a physical shop, it is considered that it requires effort that must be expended because they have to move from one store to another. Therefore, the millennial generation in Indonesia feels that they prefer to search for information related to smartphone products through online platforms compared to having to visit physical stores because it is considered that finding information through online platforms is cheaper in terms of time, effort and money.

Second, the findings of this study indicate that access to online reviews has a positive and significant effect on intentions to do webrooming on smartphone product purchases in Indonesia. Access to online reviews refers to information provided or shared by potential customers regarding products through online platforms that are shared publicly (Henning, Gwinner, Walsh, & Gremler, 2017). This finding is in accordance with the results of research conducted by (Shankar, 2018) which states that access to online reviews has an effect on intentions to do webrooming. Therefore, millennials in Indonesia will visit different online platforms to get information regarding smartphone products before they decide to make a purchase at a physical store.

Third, the findings from the PLS-SEM results show that touch and feel experience has a positive and significant effect on intentions to do webrooming. Touch and feel experience refer to the experience of touching and feeling with the product which is another major factor for buying products from offline stores (Mehra, Kumar, & Raju, 2013). In the context of purchasing on an online platform, customers do not have the opportunity to touch and feel the product, due to uncertainty with product attributes such as quality, color, size and materials used (Peck & Childers, 2006). Therefore, the millennial generation in Indonesia feels that, in the context of purchasing smartphone products, it is very important for them to be able to touch a product before buying. This is done because according to the millennial generation in Indonesia, sometimes products that look attractive and suitable on online platforms are not appropriate when consumers get them. So that in purchasing smartphone products, millennials in Indonesia must visit physical stores to get a touch experience to ensure the attributes of the product to be purchased.

Fourth, the findings of this study indicate that the perceived availability of salespeople has an effect on the intention to do webrooming. The findings in this study are in accordance with research conducted by (Eugene C. X.-A., 2019) which states that the help of in-store salespeople will help consumers in the shopping process carried out. Difficulties in ensuring the availability of salespeople in stores, not only have a negative impact but also risk diverting buyers to competitors (Haas & Kenning, 2014). Waiting for help is very distracting for consumers in the process of finding a product to buy (Dube-Rioux, Schmitt, & Leclerc, 1989). In the context of online shopping, buyers or consumers cannot get a direct response from the salesperson if there are difficulties or want to ask something related to the product to be purchased. Therefore, the millennial generation in Indonesia feels that the help of salespeople in physical stores really helps them when they want to make a smartphone purchase. The millennial generation feels that it is easy when they want to ask something related to a smartphone product to be purchased through the availability of salespeople in physical stores.

6. Conclusion

Based on the results of data processing and analysis that has been done previously, it can be concluded that the results are in accordance with the initial objectives of this study which are described as follows. The characteristics of the millennial generation in Indonesia can be seen from the demographic and usage aspects. From the demographic aspect of the respondents in this study, the millennial generation is dominated by the female gender. Furthermore, the millennial generation who carry out webbroming behavior in purchasing smartphone products, the majority work or work as students or students with the average monthly income they receive is < Rp 1,000,000. For usage analysis, it was found that the millennial generation who carried out webrooming behavior to purchase smartphone products, they had the willingness to be paid to buy smartphone products, with a price range of Rp. 3,000,000 – Rp. 6,000,000. In addition, the millennial generation in Indonesia also has certain criteria for a smartphone brand that they will buy by

visiting a physical store, namely the Apple brand, and the majority of the millennial generation in Indonesia purchased smartphone products with a period of > 6 months ago.

Furthermore, based on the results of the PLS-SEM analysis, it was found that lower search costs have a positive and significant effect on the intention to do webrooming. Because the acceptance of these factors is because the millennial generation in Indonesia feels that the cost of searching for product-related information is much more effective and efficient in terms of time, wages, and effort through online platforms before deciding to make a purchase by visiting a physical store. Then, the findings from the results of the PLS-SEM analysis in this study also stated that access to online reviews had a positive and significant relationship with the intention to do webrooming. Millennials in Indonesia feel that online reviews provided by potential customers through online platforms are very useful for them to get information before they visit physical stores to make purchases related to smartphone products. The results of the subsequent PLS-SEM analysis also state that touch and feel experience has a positive and significant relationship with intentions to do webrooming. This is due to the belief that they will buy the product after they touch it first. So that the millennial generation in Indonesia feels that in the context of purchasing smartphone products they have to visit a physical store to find out the attributes of the product to be purchased. The results of the PLS-SEM analysis which then show that the perceived availability of asles people have a positive and significant relationship with the intention to do webrooming. This is because the millennial generation in Indonesia feels that the help of salespeople in physical stores is very helpful in the shopping process. The existence of the help of salespeople in physical stores is very helpful for consumers when they want to ask something related to the product to be purchased. So this really encourages the millennial generation in Indonesia to do webrooming on the purchase of smartphone products.

This research has been carried out according to the research method used and the conceptual model that has been validated through PLS-SEM analysis. However, there are still some research limitations in this study. The limitation obtained is that the respondents in this study only cover the millennial generation, so the results obtained cannot be generalized to other generations for beneficiaries, namely smartphone offline retail stores. In addition, in terms of analysis, this study only uses PLS-SEM analysis, so the results obtained are still not optimal from various points of view of existing analytical techniques. Future research can explore other factors that can encourage someone to do webrooming. By finding these other factors will have an impact on the results of the study. In addition, from the analytical techniques used, further research is recommended to add technical analysis such as cluster analysis or ANOVA to get results from various points of view on the analytical techniques used.

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