Vol. 2 No. 3 Edisi Juli 2025 E. ISSN. 3032-2472
Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

THE INFLUENCE OF NEGATIVE ELECTRONIC WORD OF MOUTH AND VARIETY SEEKING ON BRAND SWITCHING BEHAVIOR WITH CUSTOMER ENGANGEMENT AS AN INTERVENING VARIABLE (A STUDY ON SCARLETT SERUM PRODUCTS AMONG GEN Z)

PENGARUH *NEGATIVE ELECTRONIC WORD OF MOUTH* DAN PENCARIAN VARIASI TERHADAP PERILAKU PERPINDAHAN MEREK DENGAN KETERLIBATAN PELANGGAN SEBAGAI VARIABEL INTERVENING (STUDI PADA PRODUK SERUM SCARLETT DI KALANGAN GENERASI Z)

Dertaida Panjaitan [1*], Indrawati[2*]
[1]School of Economics and Business, Telkom University
Email: dertaapanjaitan19@gmail.com [1*] indrwati@telkomuniversity.ac.id [2*]

*email Koresponden: dertaapanjaitan19@gmail.com

DOI: https://doi.org/10.62567/micjo.v2i3.1108

Article info:

Submitted: 16/07/25 Accepted: 26/07/25 Published: 30/07/25

Abstract

The growth of the cosmetics industry in Indonesia is influenced by the increasing demand for beauty products. One of the contributing factors to this trend is a common issue faced by women, especially Gen Z, which is dull skin. One of the most purchased beauty products by Gen Z is facial serum. The aim of this research is to examine the influence of Negative EWOM (Electronic Word of Mouth) and variety seeking on brand switching behavior, with customer engagement as an intervening variable for Scarlett facial serum among Gen Z consumers. This study employs a quantitative approach with descriptive and causal research methods. Data collection is done through a questionnaire survey with 300 respondents who use Scarlett facial serum in Indonesia. The data analysis technique used is Structural Equation Modeling (SEM) using SmartPLS for research data analysis. The research findings indicate that Negative EWOM have a positive influence on brand switching behavior, Negative EWOM have a negative influence on customer engagement, variety seeking have a negative influence on customer engagement, variety seeking have a positive influence on brand switching behavior, customer engagement have a negative influence on brand switching behavior, Variety seeking on brand switching behavior through customer engagement as an intervening variable have a positive influence, Negative E-WOM on brand switching behavior through customer engagement as an intervening variable also have

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

a positive influence.This research has implications for companies, including the need for companies to enhance product quality and their brand image in response to Negative E-WOM. Companies should also continue to innovate by improving product quality and uniqueness. Additionally, understanding customer preferences and market trends is crucial for competing in a market with many similar products. Maintaining customer interactions can also keep the company top of mind among customers, preventing them from switching to other brands. These actions are necessary to retain customers and prevent brand switching. Referring to several previous studies, research on negative word of mouth, brand switching behavior, variety seeking, and customer engagement has never been conducted simultaneously with the same variables and object.
.
Keywords : negative electronic word of mouth, variety seeking, customer engagement, brand switching behavior

Abstrak

Pertumbuhan industri kosmetik di Indonesia dipengaruhi oleh meningkatnya permintaan terhadap produk kecantikan. Salah satu faktor yang berkontribusi terhadap tren ini adalah permasalahan umum yang dialami oleh perempuan, khususnya Generasi Z, yaitu kulit kusam. Salah satu produk kecantikan yang paling banyak dibeli oleh Generasi Z adalah serum wajah. Penelitian ini bertujuan untuk mengkaji pengaruh Negative Electronic Word of Mouth (EWOM) dan pencarian variasi terhadap perilaku perpindahan merek, dengan keterlibatan pelanggan sebagai variabel intervening pada produk serum wajah Scarlett di kalangan konsumen Generasi Z. Penelitian ini menggunakan pendekatan kuantitatif dengan metode penelitian deskriptif dan kausal. Pengumpulan data dilakukan melalui survei kuesioner terhadap 300 responden pengguna serum wajah Scarlett di Indonesia. Teknik analisis data yang digunakan adalah Structural Equation Modeling (SEM) dengan bantuan perangkat lunak SmartPLS. Hasil penelitian menunjukkan bahwa Negative EWOM berpengaruh positif terhadap perilaku perpindahan merek, Negative EWOM berpengaruh negatif terhadap keterlibatan pelanggan, pencarian variasi berpengaruh negatif terhadap keterlibatan pelanggan, pencarian variasi berpengaruh positif terhadap perilaku perpindahan merek, keterlibatan pelanggan berpengaruh negatif terhadap perilaku perpindahan merek, pencarian variasi terhadap perilaku perpindahan merek melalui keterlibatan pelanggan sebagai variabel intervening berpengaruh positif, dan Negative EWOM terhadap perilaku perpindahan merek melalui keterlibatan pelanggan sebagai variabel intervening juga berpengaruh positif. Penelitian ini memiliki implikasi bagi perusahaan, antara lain pentingnya peningkatan kualitas produk dan citra merek sebagai respons terhadap Negative EWOM. Perusahaan juga perlu terus melakukan inovasi dengan meningkatkan kualitas dan keunikan produk. Selain itu, pemahaman terhadap preferensi pelanggan dan tren pasar sangat penting dalam menghadapi persaingan di pasar dengan banyak produk serupa. Menjaga interaksi dengan pelanggan juga dapat membantu perusahaan tetap menjadi top of mind, sehingga mencegah pelanggan beralih ke merek lain. Tindakan-tindakan ini diperlukan untuk mempertahankan pelanggan dan mencegah terjadinya perpindahan merek. Mengacu pada beberapa penelitian sebelumnya, penelitian mengenai negative word of mouth, perilaku perpindahan merek, pencarian variasi, dan keterlibatan pelanggan belum pernah dilakukan secara simultan dengan variabel dan objek yang sama.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Kata Kunci : *negative electronic word of mouth, variety seeking, customer engagement, brand switching behavior*

1. INTRODUCTION

Awareness of the importance of beauty is growing rapidly today, making cosmetics a crucial necessity for many women. CNBC Indonesia report that, evident from the proliferation of new companies in Indonesia, even during the COVID-19 pandemic. According to statistics released by the Central Statistics Agency of Indonesia, the cosmetics sector, which includes pharmaceuticals, chemicals, and traditional medicines, experienced a 9.61% increase in 2021 (cnbcindonesia.com,2022). Data from Statista indicates increasing cosmetic sales each year. In 2022, the figure amounted to $1.8 billion, and then in 2023, it reached as high as $2 billion USD (statista.com)

The top three products leading in e-commerce sales are facial cleansers, facial moisturizers, and facial serums (compas.id). Local facial serum brands ranked first with 53.9%. Concerning technology usage, Indonesian women are more likely to seek beauty information on the internet, with as many as 66.9% actively sharing beauty information through online beauty forums. After obtaining beauty product information from various media, Indonesian women typically want to purchase the products they desire. Another reason supported by data, according to a report by katadata.id, Gen Z who are aged between 18-24 years, is a generation that constantly follows the development of issues circulating on social media or the internet. Among various skincare products, facial serums are essentially one category.

The increasing variety of products available on online platforms also influences the search for skincare products on e-commerce or other online platforms that facilitate users in purchasing skincare products, especially facial serums. Among various types of facial serums from different skincare products, Scarlett facial serum has the highest negative review ratings compared to other facial serum products, as quoted from reviews on the online media platform dailyfemale.com. Through online activities, real-time negative and positive responses can arise from customers based on the products, companies, brands, and other things they use and are available on the internet through various groups of people engaged in transactions (Ismagilova et al., 2017).

The emergence of product searches can influence brand switching behavior if the products they are using do not meet their preferences. Lee et al., (2020) explained that customer motivation in seeking variety can be stimulated by derivatives or variations, where the search for variety arises from extrinsic motivation driven by environmental changes, such as seeking multiple needs and changing preferences. Negative reviews on online platforms can influence customer decisions and lead them to switch to other products. This is demonstrated in a study by Nadajaran et al. (2017) which shows that negative eWOM (Electronic Word of Mouth) affects customer behavior when switching to similar products. Another study by Zhang et al. (2015) found that eWOM has a negative impact on brand-switching behavior.

In addition to negative eWOM, variety seeking also influences brand-switching behavior. Previous research results have also revealed that the negative eWOM effect on customers seeking product variety (customers who tend to choose various options but are less engaged with a particular brand) tends to lead customers to switch to other brands,

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

according to Menidjel et al. (2022). Customer engagement has been proven to be crucial in driving key service performance indicators, including customer loyalty. Therefore, variety seeking has a negative impact on customer engagement (Menidjel et al., 2022) Another factor that can influence consumer brand-switching behavior can be based on their own emotions or feelings (Omar P. Woodham, 2017). Customer engagement has become the primary strategic focus for many companies (Pansari & Kumar, 2016; Bleier et al.,2018). Customer engagement is considered a strategic and potent tool that positively influences revenue (Bijmolt et al., 2010; Xuan Do et al., 2019), firm value, performance, and customer loyalty (Vivek et al., 2019; Xuan Do et al., 2019). According to Hollebeek et al. (2019); Menidjel et al. (2022) the definition of customer engagement is the investment of customer-driven resources (including cognitive, emotional, behavioral, and social knowledge and skills) and utilized resources (e.g., equipment) into brand interactions, applicable to customer engagement through both online and offline channels.

This research originates from the combination of several variables from previous studies.

Relationship Between Negative Electronic Word of Mouth and Brand Switching Behavior

Negative eWOM is a display of dissatisfaction with a product or service, and the more dissatisfied the consumer, the higher the number of negative words, images, and emoticons in electronic word of mouth (Nadajaran, 2015). Zhang et al. (2015) conducted a study that created a research model examining electronic word of mouth (EWOM) in virtual communities and investigated the influence of negative EWOM on consumer switching behavior. The research findings revealed that virtual relationships couldn't mitigate the constraints of negative EWOM, and the retransmission of negative EWOM had no correlation with brand switching behavior. The study also found that the strength of negative EWOM determined the frequency at which information recipients encountered or faced negative information, thus affecting their cognition and evaluation of information. Negative EWOM emerged as a significant factor in influencing brand switching. Previous research results also revealed that the negative eWOM effect from customers who seek product variety (customers who tend to choose multiple variations but are less engaged with the company) tends to lead customers to switch to other brands (Menidjel et al., 2022)

H1: Negative eWOM have a positive and significant influence on Brand Switching Behavior

Relationship Between Negative Electronic Word of Mouth and Customer Engangement

The researchers referred to the negative EWOM variable as one of the variables in the theoretical framework, where experts generally believe that negative EWOM has a greater impact on consumers than positive word of mouth (WOM) (Chevalier & Mayzlin, 2006; Zhang et al., 2015). Among various aspects of WOM influencing consumer brand switching behavior, negative EWOM is undoubtedly a significant factor. Pinghua (2010);Zhang et al. (2015) demonstrated that stronger negative EWOM can lead to a greater influence on brand switching behavior. Jidong (2009);Zhang et al. (2015) verified the impact of the strength of negative EWOM on consumer purchase decisions and brand

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

switching behavior. The strength of negative EWOM determines the frequency at which information recipients encounter negative information; furthermore, it affects their cognition and evaluation of information and the likelihood of brand switching behavior.

However, in previous research on complaint reactions, it referred to the steps and actions adopted by companies to handle negative EWOM, complaints, and negativity from consumers. This study, in contrast, focuses more on researching users of Scarlett face serum rather than directly investigating companies.

The virtual relationship component of virtual community involvement failed to enter the negative EWOM model, including the reliability and retransmission of negative EWOM. Therefore, its positive role could not be validated. The virtual relationship also couldn't enhance trust through the cognitive trust-based dimension used in the research. Additionally, the study did not establish a relationship between virtual relationships and the reliability of EWOM. Some previous researchers indicated that customers seek social benefits from online communities (Hennig-Thurau et al. 2004; Zhang et al., 2015). Subsequently, the researchers developed the influence of negative EWOM on brand switching behavior mediated by customer engagement to examine how customer engagement is conducted by the company.

H2: Negative eWOM have a negative and significant influence on Customer Engangement

Relationship Between Variety Seeking and Customer Engagement

Variety seeking is the tendency of individuals to seek diversity in choosing products or services. The study by Menidjel et al. (2022) revealed that variety seeking has a positive impact on switching intention, mediated by customer engagement. Customer engagement has proven to be crucial in driving key service performance indicators, including customer loyalty. However, in contrast, the variety-seeking variable has a negative impact on customer engagement. Additionally, the customer engagement variable also has a negative influence on switching intention, where customer engagement and relation proneness act as mediator variables for the dependent variable.Then, in the study by Niu et al. (2019), variety seeking is described as a customer behavior where, when they become bored with a product they have purchased, they prefer to buy a product they have never bought before. Lee et al. (2020) explain that customer motivation to seek variety can be stimulated by derivatives or variations, where the search for variety arises from extrinsic motivation driven by environmental changes, such as seeking multiple needs and changes in preferences. Customer engagement is a resource investment driven by customer motivation and willingness, utilizing available resources (including cognitive, emotional, behavioral, and social knowledge and skills) and deployed resources (such as equipment) into brand interactions, which applies to customer engagement through both online and offline channels (Menidjel et al. 2022). Customer engagement is a primary strategic focus for many companies (Pansari & Kumar, 2016; Behnam et al., 2018). Customer engagement is considered a strategic and powerful tool that positively influences revenue (Bijmolt et al., 2010; Xuan Do et al., 2019), company value, performance, and customer loyalty (Vivek et al., 2019; Xuan Do et al., 2019). Therefore, the researchers added variety seeking as an independent variable and customer engagement as an intervening variable to examine both the direct and indirect influences on the dependent variable.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

H3: Variety Seeking have a negative and significant impact on Customer Engangement

Relationship Between Variety Seeking and Brand Switching Behavior

Brand Switching Behavior is the shift of brands that indicates customers changing or moving from one brand to another (Zhang et al., 2015).The study by Menidjel et al. (2022) reveals that variety seeking has a positive impact on switching intention, mediated by customer engagement. Customer engagement has been proven to be crucial in driving key service performance indicators, including customer loyalty. However, in contrast, the variety-seeking variable has a negative impact on customer engagement. Additionally, the customer engagement variable also has a negative influence on switching intention, with customer engagement and relation proneness acting as mediator variables for the dependent variable. However, research conducted by Palma et al. (2021) suggests that variation search or seeking also affects brand switching. Variation search occurs when there are factors that influence the search for variety, such as product characteristics and dissatisfaction with the product.

H4: Variety Seeking have a positive and significant influence on Brand Switching Behavior

Relationship Between Customer Engangement and Brand Switching Behavior

The study by Menidjel et al. (2022) Customer engagement has proven to be crucial in driving key service performance indicators, including customer loyalty Additionally, the customer engagement variable has a negative influence on switching intention, where customer engagement and relation proneness act as mediator variables for the dependent variable and customer relationship vulnerability tends to impact the negative relationship between engagement and switching intention. The more vulnerable an individual's relationship is, the less likely they are to switch companies (Van Trijp et al., 1996; Menidjel et al., 2022)

This study focuses more on brand switching behavior because the intention to switch brands is the likelihood or intent of consumers to switch to other competing brands. Consumers typically stick to the same brand because they are accustomed to it, feel loyal to it, or because there are high switching costs. Brand switching behavior, on the other hand, represents a shift from one brand to another (Kordi Ghasrodashti, 2018; Wang et al., 2019; Liao et al., 2020), indicating customer turnover for a company (Cheng et al., 2019; Liao et al., 2020). Therefore, the researchers focus on brand switching behavior.

H5: Customer Engagement have a negative and significant influence on Brand Switching Behavior

Relationship Between Negative Electronic Word of Mouth, Variety Seeking towards Brand Switching Behavior and Customer Engagement as Intervening Variable

In previous studies used as references, it was revealed that there are independent variables that impact the dependent variable of brand switching behavior, and variety seeking affects customer engagement. However, customer engagement in previous research functions as a mediator variable. Therefore, in this study, we aim to investigate the interrelationships among these variables, assess the magnitude of the influence of each factor, and understand the connections between variables. This includes examining the direct impact of negative EWOM on customer engagement and brand switching behavior,

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

the direct impact of variety seeking on brand switching behavior (direct effect). Additionally, we will explore the influence of variety seeking and negative EWOM on brand switching behavior through customer engagement, which is referred to as an indirect effect.

In the study by Menidjel et al., 2022, it is stated that customer relationship vulnerability tends to have a negative impact on the relationship between engagement and switching intention. This means that previous researchers have suggested that the expected strength of this negative relationship depends on the vulnerability of the customer's relationship. The more vulnerable an individual's relationship is, the less likely they are to switch companies (Van Trijp et al., 1996; Menidjel et al., 2022). Therefore, in this study, we do not incorporate relationship proneness as a mediating or additional variable because the researchers want to focus on examining how variety seeking affects variety seeking and customer engagement as intervening variables or variables that exert indirect influence on each other

H6: Negative eWOM have a positive and significant influence Brand Switching Behavior through Customer Engagement

H7: Variety Seeking have a positive and significant influence on Brand Switching Behavior through Customer Engagement

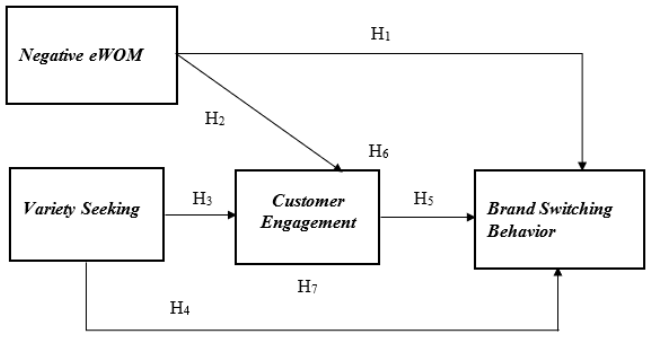

Figure 1: Research Framework

2. RESEARCH METHODOLOGY

Research Design

The research methodology in this study is quantitative, as stated by Indrawati (2015), quantitative methods are widely used in various research due to their suitability for testing models or hypotheses. Based on its objectives, this research falls under the category of causal research because it aims to test whether the relationships between variables are causal and to examine whether the relationships found in previous research also apply to the study I am conducting. According to Indrawati (2015), the purpose of causal research is to understand which variables are the causes and which are the effects and also to assess the relationships between the causal and effect variables, whether they are positive or negative.

Population and sample

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

The population selected by the researcher for examination will serve as the basis for the research outcomes obtained. The population in this study consists of users of Scarlett facial serum products in Indonesia.

The sample selection in this study consists of users of Scarlett facial serum products, residents of Indonesia, members of the Generation Z population (aged 18-26 years), and females. The sampling technique used in this research is nonprobability sampling. According to Indrawati (2015), nonprobability sampling is a sampling technique that allows members of the population to have an equal chance of being selected as a sample, or it is unknown whether they have an equal chance or not. The author chose nonprobability sampling because not the entire population is included in the sample. The technique chosen in nonprobability sampling is purposive sampling. Purposive sampling involves intentionally selecting specific sample members because only those samples can represent or provide information to answer the research questions (Indrawati, 2015). The total sample size in this study is 300 respondents who meet the predetermined criteria.

Research instrument and data collection procedure

In this research, primary data is collected using a questionnaire, and the data source is obtained from respondents, who are individuals responding to or answering the researcher's statements. According to Sekaran and Bougie (2017), primary data refers to information obtained directly by the researcher related to the variables of interest for specific study purposes. With 28 statement items, the negative electronic word of mouth variable consists of 8 statement items, the variety seeking variable has 6 statement items, the customer engagement variable includes 10 statement items, and the brand switching variable comprises 4 statement items. The questionnaire itself is a data collection technique performed by providing a set of questions online to be distributed to respondents for them to answer. From the distributed questionnaires, a total of 317 respondents provided responses, but 17 of the responses could not be used as they did not meet the sample criteria.

Measures and scale items

Prior to distributing the questionnaires, a survey was conducted with 30 respondents to assess the validity and reliability of the questionnaire items. The results of this pre-survey indicated that the questionnaire items were valid and reliable, thus allowing for further research to be conducted.

According to Sekaran and Bougie (2017), validity is a test of how well an instrument developed measures a specific concept it intends to measure. Valid means the instrument can be used to measure what it is supposed to measure. To ensure valid data, it is necessary to conduct validity testing on the testing instrument (questions) first. According to Sekaran and Bougie (2017), reliability testing is a test of how consistently a measurement instrument measures whatever is being measured. Reliability testing can be conducted collectively on all items of statements. The purpose of reliability testing is to measure whether the questionnaire's consistency is reliable enough or not.

According to Indrawati (2015), a scale is a procedure or process of assigning symbols or numbers to each statement item in a questionnaire. Each statement item has five responses with values ranging from 1 to 5, where 1 represents “strongly disagree”, and the highest value is 5 represents “strongly agree”.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

The application of botanical pesticides has become a vital alternative in reducing dependence on synthetic chemical pesticides, which negatively impact the environment, human health, and contribute to pest resistance. One of the most promising plants as a raw material for botanical pesticides is the soursop (*Annona muricata*). This plant, a member of the Annonaceae family, is known to contain various bioactive compounds such as acetogenins, alkaloids, flavonoids, and tannins, which play significant roles in insecticidal and antifeedant activities against crop pests (Isman & Seffrin, 2014; Oriyomi, 2018).

Numerous studies have confirmed that the active compounds in both the leaves and seeds of soursop are capable of causing mortality in insect pests. Awan et al. (2022) demonstrated that soursop leaf extract significantly increased the mortality rate of *Spodoptera litura* larvae under laboratory conditions. The bioactive compounds in soursop leaves act by disrupting the insect nervous system, inducing paralysis, and inhibiting feeding activity, ultimately leading to larval death (Fathoni et al., 2013).

Similar findings were reported by Firdausiah et al. (2022), who combined soursop leaf extract with cigarette butt waste and successfully reduced the population of *Spodoptera frugiperda*, a pest species with similar feeding behavior to *S. litura*. Furthermore, Muthu et al. (2023) revealed that treatment with soursop seed extract caused histological damage to the midgut tissues of *S. litura* larvae, including epithelial degeneration, swelling, and cellular disorganization. This damage directly impaired the larvae's ability to digest food, thereby accelerating mortality.

Additional research has confirmed that the Annonaceae family—particularly *A. muricata* and *A. squamosa*—exhibits high insecticidal potential. Studies by Pardeshi & Vetal (2019) and Mahmoud & Hassan (2022) proved that *Annona squamosa* seed extract effectively reduced the survival of *Spodoptera* spp. through both contact and systemic toxicity. Meanwhile, Alves et al. (2016) noted that various Annonaceae species can be selectively chosen based on their secondary metabolite profiles and effectiveness against target species such as *S. frugiperda*.

From an ethnobotanical perspective, Indonesian communities have long utilized soursop as a natural pesticide. Sidauruk et al. (2022) documented the use of local plants, including *Annona muricata*, by farmers in Karo Regency to support food safety through biological pest control. This practice aligns with sustainable agricultural approaches that avoid environmental pollution from chemical residue accumulation (Darlis et al., 2024).

Despite its promising potential, Supriyono et al. (2024) noted that the adoption of botanical pesticides in Indonesia still faces major challenges, including a lack of formulation standardization, limited field efficacy testing, and inadequate dissemination among farmers. These issues highlight the need to bridge laboratory research with practical field implementation using a multi-faceted approach.

Furthermore, effective botanical extract formulation must consider solvent types, optimal concentrations, and application methods. Bandara & Ranatunge (2020) showed that aqueous-based botanical formulations of *Annona* seeds are also effective in pest control, with added benefits of being environmentally friendly and economically viable. This implies that not only the leaves, but also other plant parts of *Annona* hold high value in pest management.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Research by Leatemia & Isman (2004) and Ribeiro et al. (2014) further emphasized that seed and leaf extracts of *Annona* spp. can exert strong toxic effects on Lepidopteran species such as *Trichoplusia ni* and *Spodoptera* spp., even at low concentrations. These findings underscore the importance of conducting formulation research and targeted application studies on specific host crops.

Overall, existing studies indicate that soursop leaves exhibit consistent effectiveness against *Spodoptera litura* and related pest species. The insecticidal activity of its bioactive compounds causes physiological and behavioral disruptions in the pests, directly contributing to population control. This opens up significant opportunities for developing botanical pesticides based on *Annona muricata*, particularly for horticultural crops like mustard greens, which are vulnerable to *S. litura* infestations.

Although numerous studies have demonstrated the efficacy of *Annona muricata* extracts, most have been limited to laboratory-scale trials and have not specifically focused on mustard greens as the test plant. Therefore, this study contributes to filling a notable research gap by specifically assessing the effectiveness of soursop leaf extract against *Spodoptera litura* on mustard greens. In doing so, this research not only reinforces the empirical evidence but also presents a form of novelty by focusing on a high-consumption horticultural crop, thereby supporting sustainable agriculture and food security.

3. EMPIRICAL FINDINGS

Descriptive statistics

The results hows that for the negative electronic word of mouth variable, respondents mostly answered with 'Agree' and 'Strongly Agree' for each indicator, with the 'Agree' option being the most frequent, averaging 33.75%. Therefore, it can be inferred that users of Scarlett facial serum will inform their friends about negative information regarding Scarlett facial serum when others are considering purchasing Scarlett serum products.

For variety seeking, the majority of respondents answered 'Disagree,' with an average score in the 'Disagree' column of 45.00%. This indicates that users of Scarlett facial serum are influenced by the various variations of facial serums available in the market and around them.

For the customer engagement variable, the majority of respondents answered 'Agree' to the statements related to customer engagement, with an average score in the 'Agree' column of 25.30%. This indicates that Scarlett's customer engagement efforts with their customers are effective.

For the brand switching behavior variable, the majority of respondents answered 'Agree' to the statements related to brand switching behavior, with an average score in the 'Agree' column of 34.33%. This indicates that users of Scarlett facial serum tend to exhibit brand-switching behavior to other brands if the product they are using does not meet their expectations.

The results show that based on respondent characteristics by age, out of 300 respondents, the majority are 25 years old, with 53 respondents (17.17%). Looking at the highest level of education, out of 300 respondents, the majority have a Bachelor's degree, with 137 respondents (45.7%). Regarding occupation, out of 300 respondents, the most common occupation is private employee, with a total of 127 respondents or 42.3%. In terms of monthly income, out of 300 respondents, the majority fall into the categories of Rp 2,500,001 – Rp 5,000,000 and Rp 5,000,001 – Rp 7,500,000, both with the same

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

number of 94 respondents, totaling 188 individuals or 62.6%. This indicates that monthly income is dominated by respondents with incomes ranging from Rp 2,500,001 – Rp 5,000,000 and Rp 5,000,001 – Rp 7,500,000.

Construct reliability and validity

The responses of the 300 respondents were analyzed using Structural Equation Modeling Partial Least Square (SEM-PLS), along with validity and reliability testing of the model.

Convergent validity is conducted to assess the accuracy of each statement. Convergent validity testing in SEM-PLS is evaluated using the loading factor. In this study, the rule of thumb score will be used, with a value >0.70, which means that if a statement has a value >0.70, it is considered valid and exhibits good convergent validity (Indrawati, 2015).

Reliability testing is a test related to the level of confidence or consistency of the results of a measurement. Reliability testing is assessed based on the values of Cronbach's Alpha and Composite Reliability, with a minimum coefficient value of 0.70 (Indrawati, 2015)

Measurement and structural research model

The measurement model evaluation was conducted through testing the validity and reliability that represent each construct. Testing was performed on the entire respondents (300 respondents) using SmartPLS 3 software. In testing the first outer model, Convergent validity was examined by measuring the loading factor and Average Variance Extracted (AVE). The second test was for discriminant validity, which involved measuring the square root of AVE, cross-loading values, heterotrait-monotrait ratio (HTMT) values, and multicollinearity variance inflation factor (VIF). The third step involved reliability testing using two methods, namely Cronbach's Alpha and Composite Reliability.

The AVE value of each variable is greater than 0.5 which means the model has a good of cenvergent validity. Continuing the next step is testing the reliability of the model, The value of Composite Reliability for each variable is greater than 0.7. The value of cronbach’s alpha of each variables is greater than 0.6. these data indicates that all the indicators for the reliability testing are fulfilled by the model which means the model has a good reliability (Indrawati,2015).

This research conducted testing of the structural model, also known as the inner model. The structural model in PLS is evaluated using R Square for dependent variables and the path values or t-values for each path to test the significance between variables (Abdillah and Hartono, 2015).

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

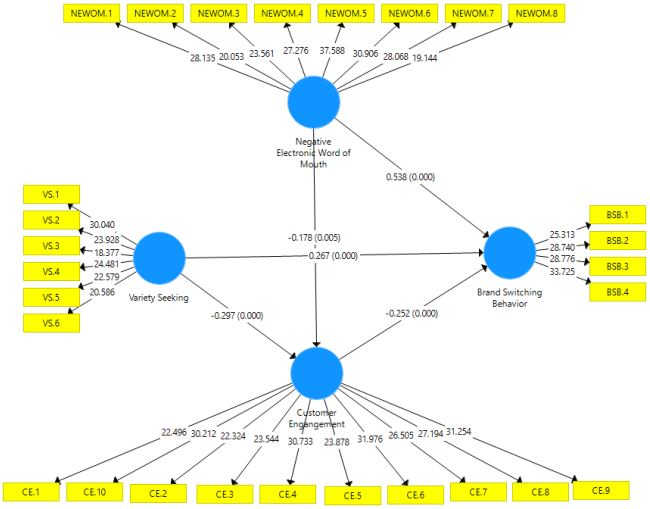

Figure 2: PLS Algorithm

In examining whether the path coefficients are significant or not, the researcher compared the path coefficients with t-values. Each variable should have a minimum t-value of at least 1.65, considered significant at the 95% confidence level in a one-tailed test (Indrawati,2015) . Table 3 shows t-values for each variable greater than 1.65, which means that the independent variables for Negative Electronic Word of Mouth and Variety Seeking have a positive and significant influence on Brand Switching Behavior. Then for Negative Electronic Word of Mouth have a negative and significant on Customer Engangement, Customer Engangement also have a negative and significant impact on Brand Switching Behavior, Variety Seeking have a negative and significant on Customer Engangement. From indirect effect with Customer Engangement as a intervening variabel have a a positive and significant influence on Brand Switching Behavior. Hypothesis testing in this study is one-tailed, as the goal of this research is to determine the relationships between variables and also because, based on the literature review and previous research, this study uses a one-tailed test. This testing employs a significance level of 5% and believes that the results of hypothesis testing are accurate at a 95% confidence level, as the typical confidence level used in business research is 95% or a significance level of p = 0.05 (Indrawati, 2015). To test the hypotesis, Table 3 shows the result each relation.

Convergent validity testing in SEM-PLS is assessed using loading factors. In this study, we will employ a rule of thumb score with a value >0.70, which means that if a statement has a loading factor >0.70, it is considered valid and exhibits good convergent validity (Indrawati, 2015). From the test results, each indicator has a loading factor value >0.70, which means that each indicator has a high correlation with its respective variable and is considered valid overall. Table 1 shows the result.

The Average Variance Extracted (AVE) values for all variables are greater than 0.50. Based on the calculation results of the loading factors and Average Variance Extracted (AVE) for all variables and indicators, they have met the validity criteria (Indrawati, 2015). An indicator of a variable is considered valid if it has a higher correlation score

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

with other variables. The cross-loading value for each item must be higher than the cross-loading value of that item with other variables (Santosa, 2018). In the results, the cross-loading values for each item are higher compared to the items in other variables. This indicates that the variables in this study meet the criteria for discriminant validity.

Besides measuring discriminant validity with cross-loading, it can also be assessed using the Heterotrait-Monotrait Ratio (HTMT). The HTMT ratio represents the maximum value of each variable. The HTMT ratio for the variables should be less than 0.85 for there to be a detectable difference between the two variables. (Indrawati et al. 2022). To avoid bias in this research, it is measured using the value of multicollinearity variance inflation factor (VIF). VIF must be less than 3.3.

In this research, the model fit is assessed based on several criteria: NFI (Normed Fit Index) is used to measure the acceptance level of a model. NFI produces values between 0 and 1. The closer the NFI value is to 1, the better the fit (Ghozali, 2021: 79). According to Hair et al. (2017: 204), if the NFI value is greater than or equal to 0.90, then the model has a good fit, while values between 0.80 and 0.90 are considered to have marginal or moderate fit. SRMR (Standardized Root Mean Square Residual). If the SRMR value is less than 0.08 to 0.10, it is still considered a good fit. RMS_theta assesses the extent to which the residual outer model is correlated. This measure should approach zero to indicate a good model fit.

To determine whether the proposed model can be used, it can be seen from the R-square value. The R-square value resulting from the calculation of the PLS Algorithm is considered valid. In conclusion, this model has significant strength in measuring Brand Switching Behavior impact on user face serum Scarlett with 58 percent. Meanwhile, the R-square value that influences Customer Engagement is only 13.8 percent, which means that the influence of Negative Electronic Word of Mouth and Variety Seeking on Customer Engagement falls into the category of weak.

From the results of the research conducted, the following conclusions can be drawn: negative electronic word of mouth has a direct impact on brand switching behavior with a coefficient of 0.538. Negative electronic word of mouth also has a direct impact on customer engagement with a coefficient of -0.178. Negative electronic word of mouth indirectly affects brand switching behavior with an indirect coefficient of 0.045 when customer engagement is treated as an intervening variable. Variety seeking has a direct impact on customer engagement with a coefficient of -0.297. Variety seeking also has a direct impact on brand switching behavior with a coefficient of 0.267. Variety seeking indirectly affects brand switching behavior with an indirect coefficient of 0.075 when customer engagement is treated as an intervening variable. Customer engagement has a direct impact on brand switching behavior with a coefficient of -0.252. Based on the research results, it can be concluded that the variable with the most significant impact is negative electronic word of Mouth on brand switching behavior, followed by variety seeking on brand switching behavior in the second position.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Table 1
FL, VIF, Loading, AVE, CA, and CR results.

Latent Variable	Item Code	FL	Loading	VIF	CA	CR	AVE
Negative Electronic Word of Mouth	NEWOM 1	0.785	0.785	2.125	0,910	0,927	0.680
	NEWOM 2	0.749	0.749	1.860			
	NEWOM 3	0.774	0.774	2.068			
	NEWOM 4	0.785	0.785	2.037			
	NEWOM 5	0.824	0.824	2.535			
	NEWOM 6	0.814	0.814	2.411			
	NEWOM 7	0.794	0.794	2.218			
	NEWOM 8	0.742	0.742	1.776			
Variety Seeking	VS 1	0.796	0.796	1.922	0,898	0,922	0.646
	VS 2	0.808	0.808	2.142			
	VS 3	0.825	0.825	2.252			
	VS 4	0.821	0.821	2.146			
	VS 5	0.819	0.819	2.201			
	VS 6	0.811	0.811	2.122			
Customer Engangement	CE 1	0.788	0.788	2.836	0,939	0,948	0.615
	CE 2	0.770	0.770	2.885			
	CE 3	0.768	0.768	2.235			
	CE 4	0.808	0.808	3.074			
	CE 5	0.810	0.810	2.732			
	CE 6	0.815	0.815	2.905			
	CE 7	0.813	0.813	3.005			
	CE 8	0.820	0.820	2.754			
	CE 9	0.830	0.830	2.981			
	CE 10	0.816	0.816	2.545			
Brand Switching Behavior	BSB 1	0.808	0.808	1.790	0,843	0,895	0.662
	BSB 2	0.834	0.834	1.913			
	BSB 3	0.829	0.829	1.866			
	BSB 4	0.828	0.828	1.899			

4.

Notes: FL = Factor Loading; VIF = Variance Inflation Factor; CA = Cronbach's alpha; CR = Composite Reliability; AVE = Average Variance Extracted.

Table 2
Heterotrait-Monotrait Ratio (HTMT)

	Brand Switching Behavior	Customer Engangement	Negative Electronic Word of Mouth	Variety Seeking

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Brand Switching Behavior			
Customer Engangement	0.518		
Negative Electronic Word of Mouth	0.731	0.245	
Variety Seeking	0.508	0.352	0.192

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Table 3
Evaluation of structural model results

Hypotesis	Relationship	Path Coefficient	T-Statistic	P-Value	Hypotesis Result
Direct Effect					
H1	NEWOM → BSB	0,538	7,896	0,000*	Accepted
H2	NEWOM → CE	-0,178	2,588	0,005*	Accepted
H3	VS → CE	-0,297	4,499	0,000*	Accepted
H4	VS → BSB	0,267	3,953	0,000*	Accepted
H5	CE → BSB	-0,252	4,323	0,000*	Accepted
Indirect Effect					
H6	NEWOM → CE → BSB	0,045	2,320	0,010*	Accepted
H7	VS → CE → BSB	0,075	3,215	0,001*	Accepted

Notes: NEWOM = Negatvie Electronic Word of Mouth; VS = Variety Seeking; CE = Customer Engangement; BSB = Brans Switching Behavior
*Significant

Table 4
Q^2 and R^2 results

Variabel Endogen	Q^2 (1-SSE/SSO)	R^2
Brand Switching Behavior	0,389	0,580
Customer Engangement	0,086	0,138

Table 5
Goodness-of-fit measures of the structural model.

SRMR	RMSTheta	NFI	Chi Square
0.048	0.115	0.864	757.307

Notes: SRMR = Standardized Root Mean Square Residual; NFI = normed fit index

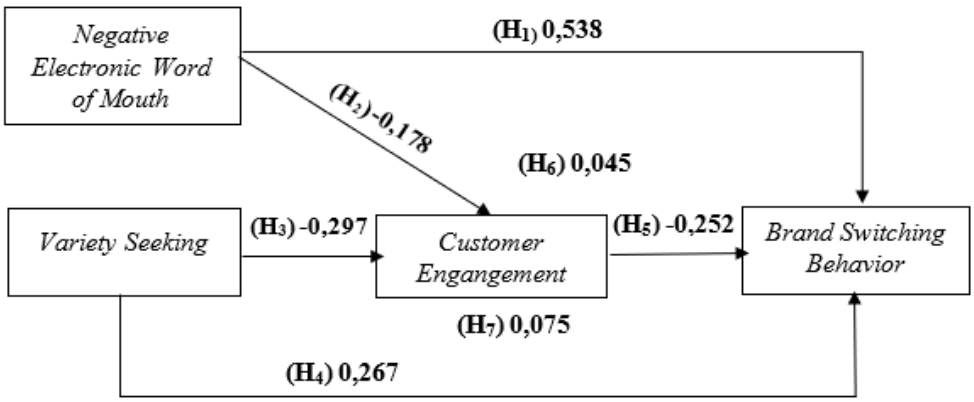

Figure 3: Path model result

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

4. CONCLUSSION

Overall, the research results can be summarized as follows: Based on the descriptive analysis, respondents' assessments of negative electronic word of mouth and customer engagement fall into the good category, while their assessment of variety seeking falls into the 'not good' category. Furthermore, based on the descriptive analysis, respondents' assessment of brand Switching Behavior falls into the very good category.

From the results of the research conducted, it is evident that the variable with the highest influence is negative electronic word of mouth on brand switching behavior. The second most significant influence is the variety seeking variable on brand switching behavior. Out of the seven hypotheses tested, it was found that each hypothesis was accepted.

The results of this study can be used as a reference for similar research on Negative Electronic Word of Mouth, variety seeking, customer engagement, and brand switching behavior with different objects. This study specifically focused on Scarlett facial serum, but future research could investigate other Scarlett products, such as body wash, body lotion, and others. Additionally, research could target specific products with different objects for comparison. Furthermore, based on the results of this study, additional variables can be included to strengthen the research findings, such as brand trust, relationship proneness, brand equity, purchase intention, and others, or the study could be modified by changing customer engagement as an exogenous or independent variable.

Limitation of this study is that the research sample focused on the Gen Z population, specifically females. Future research should consider expanding the scope beyond Gen Z and females and explore different age groups to uncover potential differences in research outcomes among these age groups. Additionally, gender differences could be examined in more detail.

Second, this study focused solely on Scarlett's facial serum product. Therefore, future research could explore other products from the same company, examining aspects such as negative electronic word of mouth or other factors. This would provide insights into how the company responds in a competitive business environment.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

5. REFERENCES

Abdillah, W., Jogiyanto, P. (2015). Partial Least Square : Alternatif Structural Equation Modeling Dalam Penelitian Bisnis. Yograkarta: Andi.

Bayu, Dimas, J. (2021). *Indonesia Didominasi Milenial dan Generasi Z.* [online]. Tersedia: https://katadata.co.id/ariayudhistira/infografik/6014cb89a6eb7/indonesia-didominasi-milenial-dan-generasi-z

Behnam, Mohsen., Linda, Hollebeek, D., Clark, Moira, K., Farabi. Reza., (2020). Exploring customer engagement in the product vs. service context. Journal of Retailing and Consumer Services 60 102456. https://doi.org/10.1016/j.jretconser.2021.102456

Endit, N.P.I. (2022). *Peluang Pasar: Produk Kecantikan dan Perawatan*. [online]. Tersedia: https://ukmindonesia.id/baca-deskripsi-posts/peluang-pasar-produk-kecantikan-dan-perawatan

Femaledaily Website. (2023). *Scarlett Brightly Ever After Serum.* [online]. Tersedia: https://reviews.femaledaily.com/products/treatment/serum-essence-23/scarlett/scarlett-whitening-brightly-ever-after serum?

Ghozali, I. (2021). *Partial Least Squares Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.2.9 Untuk Penelitian Empiris* (3 ed.). Universitas Diponegoro Semarang

Hasibuan, Linda. (2022). *Industri Kecantikan Tahan Krisis, Laris Manis Meski Pandemi*. [online]. Tersedia:https://www.cnbcindonesia.com/lifestyle/20221104104902-33-385138/industri-kecantikan-tahan-krisis-laris-manis-meski-pandemi

Hennig-Thurau, Walsh, T., & Walsh., G. (2003). *Electronic Word-of-Mouth: Motives for and Consequences of Reading Customer Articulations on the Internet*. International Journal of Electronic Commerce, 51-74. https://www.tandfonline.com/doi/abs/10.1080/10864415.2003.11044293

Indrawati. (2015). *Metode Penelitian Manajemen dan Bisnis: Konvergensi Teknologi Komunikasi dan Informasi*. Bandung: PT Refika Aditama.

Indrawati, I., Ramantoko, G., Tri Widarmanti, T., Aziz, I. A., & Khan, F. U. (2022). Utilitarian, hedonic, and self-esteem motives in online shopping. Spanish Journal of Marketing - ESIC Emerald Publishing Limited. https://doi.org/10.1108/SJME06-2021-0113, 2444-9709 https://www.emerald.com/insight/search?q¼Utilitarian%2Cþhedonic%2Cþandþselfesteemþmotivesþinþonlineþshopping.

Ismagilova, Elvira et.al (2017). *Electronic Word of Mouth (e-WOM) in Marketing Context* .Switzerland : Springer. https://link.springer.com/book/10.1007/978-3-319-52459-7

Joseph F Hair, J., Hult, G.T.M., Ringle, C.M. & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Second Edi ed. Sage. California: SAGE Publications, Inc

Lee, Sanghyop., *et al*. (2020). *Variety-seeking motivations and customer behaviors for new restaurants: An empirical comparison among full-service, quick-casual, and quick-service restaurants*. Journal of Hospitality and Tourism Management 43 (2020) 220-231. https://doi.org/10.1016/j.jhtm.2020.04.004

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Menidjel, Choukri., Hollebeek, Linda D., Urbonavicius, Sigitas., & Sigurdsson, Valdimar. (2022). *Why switch? The role of customer variety-seeking and engagement in driving service switching intention.* Journal of Service Marketing. https://www.emerald.com/insight/content/doi/10.1108/JSM-04-2022-0122/full/html

Nadarajan, G., Bojei, J., & Khalid, H. (2017). The study on negative eWOM and its relationship to consumer's intention to switch Mobile Service Provider. Procedia Computer Science 124 (2017), 388-396. https://www.sciencedirect.com/science/article/pii/S187705091732937X

Niu, Baozhuang., Chen, Lei., Liu, Yaoqi., Jin, Yong. (2019). Joint price and quality decisions considering Chinese customers' variety seeking behavior. International Journal of Production Economics 97-107. https://www.sciencedirect.com/science/article/abs/pii/S0925527319300854

Omar P. Woodham, M. L. (2017*). I Know What I Like, I Like What I Know: How Breadth of brand experience and cognitive effor influence brand switching*. Marketing theory and practice, 141-159. https://www.tandfonline.com/doi/full/10.1080/10696679.2016.1270771

Palma, Marisa, A., Iriani,Sri,S., & Harti. (2021). *Effect of Variety Seeking and Electronic Word of Mouth on Brand Switching.* International Journal of Multicultural and Multireligious Understanding 333-345. https://ijmmu.com/index.php/ijmmu/article/view/2976

Rukmana, I.D. (2023). *Compas Market Insight Report 1 Semester 2022, Siapa Juaranya di Paruh Pertama?*. [online]. Tersedia: https://compas.co.id/article/market-insight-report-shopee-tokopedia/

Salsabila. (2022). Data Penjualan Brand Serum Lokal Terbaik: Bio Beauty Lab Masuk 5 Besar. [online]. Tersedia: https://compas.co.id/article/brand-serum-lokal/

Lee, Sanghyop., *et al*. (2020). *Variety-seeking motivations and customer behaviors for new restaurants: An empirical comparison among full-service, quick-casual, and quick-service restaurants*. Journal of Hospitality and Tourism Management 43 (2020) 220-231. https://doi.org/10.1016/j.jhtm.2020.04.004

Liao, Junyun., Muhua Li and Haiying Wei. (2020). *Antecedents of smartphone brand switching: a push–pull– mooring framework. Asia Pacific Journal of Marketing and Logistics Vol. 33 No. 7, 2021*. https://www.emerald.com/insight/content/doi/10.1108/APJML-06-2020 0397/full/pdf?title=antecedents-of-smartphone-brand-switching-a-push-pull-mooring-framework.

Sekaran, Uma & Roger, Bougie. (2017). Metode Penelitian untuk Bisnis: Pendekatan Pengembangan-Keahlian (Edisi 6, Buku 2). Jakarta Selatan: Salemba Empat.

Statista Website. (2023). *Personal Care*. [online]. Tersedia: https://www.statista.com/outlook/dmo/ecommerce/beauty-health-personal-household-care/personal-care/indonesia

Ubdaidillah, M. (2023). *Tren Belanja online 2022, Gen Z suka Beli mie instan dan Serum Wajah*. https://swa.co.id/swa/trends/tren-belanja-online-2022-gen-z-suka-beli-mie-instan-dan-serum-wajah

Xuan Do et al (2019). Determinants of negative customer engangement behaviours. Journal of Service Marketing 117 - 135. DOI 10.1108/JSM-02-2019-0050

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Zapclinic Website. (2023). *Zap Beauty Index 2023*. [online]. Tersedia: https://zapclinic.com/zapbeautyindex

Zhang, H., Takanashi, C., Gemba, K., & Ishida, S. (2015). *Empirical research on the Influence of Negative Electronic Word-Of-Mouth on Brand Switching Behaviour*. World Journal of Management, 46-61. https://zantworldpress.com/wp-content/uploads/2016/02/4.-Haibin.pdf