

Research Article

## Analysis of External Factors Affecting Purchasing Decisions of Scarlett Whitening Products Through the Shopee Platform Using the PESTEL Model: A Study of Students at the University of Sumatera Utara, Medan

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**Abstract.** This study aims to analyze external factors influencing purchasing decisions of Scarlett Whitening products through the Shopee platform among students of the University of Sumatera Utara by applying the PESTEL framework. Using a qualitative descriptive analytical approach within a constructivist paradigm, the research examines how political, economic, social, technological, environmental, and legal factors shape the five stages of the consumer purchasing decision process among digital native consumers. Data were collected through in-depth interviews, focus group discussions, participatory observation, and digital documentation involving 28 student informants from various faculties. The findings reveal that social factors such as peer influence, online reviews, and social media exposure are the most dominant determinants affecting nearly all stages of decision-making. These are followed sequentially by economic, technological, legal, political, and environmental factors. Furthermore, the interaction among factors, particularly socio-economic, socio-technological, and legal-political dynamics, demonstrates that purchasing decisions are not formed in a linear manner. Instead, they emerge through the simultaneous construction of consumer perceptions shaped by multiple external stimuli within a digital marketplace context.

**Keywords:** Consumer Behavior; Digital Marketplace; PESTEL; Purchasing Decisions; Scarlett Whitening

### 1. Introduction

The development of the digital era has fundamentally transformed consumer behavior from passive patterns to active and critical ones in searching for, evaluating, and processing information before making purchasing decisions, along with increasing internet access, smartphone penetration, advancements in mobile technology, and trust in online transactions. Modern consumers no longer rely on traditional marketing, but instead utilize digital platforms and e-commerce such as Shopee as the primary space to compare products, read reviews, respond to social media trends, and simultaneously consider economic, regulatory, socio-cultural, and environmental factors. The complexity of these interacting external factors has driven significant evolution in digital marketing in Indonesia, as reflected in the rapid growth of e-commerce market value, increasing Average Order Value, and the dominance of live streaming, social commerce, and influencer marketing strategies. Accordingly, e-commerce platforms no longer function merely as distribution channels, but have evolved into integrated marketing ecosystems based on real-time data, personalization, and automation, which require a comprehensive and multidimensional approach to analyzing consumer behavior.

**Table 1.** Comparison of Market Share of E-commerce Platforms in Indonesia, 2025

Platform	Market Share (%)	Traffic (Million Clicks)	Key Characteristics
Shopee	53.22	228	Live streaming, gamification, social commerce
TikTok Shop	27.37	–	Video commerce, viral marketing

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Platform	Market Share (%)	Traffic (Million Clicks)	Key Characteristics
Tokopedia	–	180	Local marketplace, strong in the B2B segment
Lazada	–	95	Cross-border commerce, premium brands

Source: APJII (2025)

The data in Table 1 indicate that Shopee dominates the Indonesian e-commerce market with a market share of 53.22% and the highest traffic of 228 million clicks, far exceeding TikTok Shop, which ranks second with 27.37%. This dominance reflects the success of gamification, social commerce, and live streaming strategies, while the rapid growth of TikTok Shop signals a shift in consumer preferences toward video commerce and entertainment-based content. Meanwhile, Tokopedia and Lazada occupy different segments through their focus on local marketplaces and cross-border trade. In line with this, the rapid performance of digital marketing has driven the growth of Indonesia's beauty industry led by Gen Z consumers, making the beauty and personal care category a major contributor to Shopee's GMV and a strategically relevant context for analysis within the digital e-commerce ecosystem.

**Table 2.** Ranking of Product Categories Based on GMV on Shopee Indonesia, Q1 2025

Ranking	Category	GMV Percentage (%)	YoY Growth
1	Home & Living	15.0	+12.5%
1	Beauty, Health & Personal Care	15.0	+18.2%
3	Fashion	12.8	+8.3%
4	Electronics	11.5	+5.7%
5	Sports & Outdoor	9.2	+15.1%

Source: Statista (2025)

Table 2 shows that the Beauty, Health & Personal Care category ranks at the top alongside Home & Living, each contributing 15% to Shopee Indonesia's total GMV, and even recording the highest year-over-year growth of 18.2%, which confirms the increasing consumer preference for purchasing beauty products online. This dominance creates a competitive space for local brands such as Scarlett Whitening, which have successfully leveraged digital-first strategies, influencer marketing, and optimization of the Shopee ecosystem to build a product image that is high-quality, affordable, and relevant to young consumers. This success is inseparable from the role of Shopee as a market leader that has evolved into an integrated digital ecosystem with live streaming, gamification, analytics, and social commerce features that directly mediate various external factors in purchasing decisions.

In this context, students of the University of Sumatera Utara as digital native consumers represent a strategic segment that is highly responsive to social, economic, and technological dynamics, thereby requiring a comprehensive analytical approach through the integration of the PESTEL model and digital consumer behavior to fill research gaps that remain fragmented in the academic literature.

The PESTEL model in the context of digital commerce can integrate the analysis of digital regulation and e-commerce policies (Political/Legal), economic indicators such as digital payment adoption and purchasing power parity (Economic), social media trends and influencer culture (Social), platform technology advancement and AI implementation (Technological), as well as sustainability awareness and eco-friendly packaging trends (Environmental) (Wang, 2025). This study is highly relevant given the rapidly changing dynamics of the e-commerce industry and digital consumer behavior, which require in-depth understanding for the development of marketing strategies and business decision-making in the digital era, particularly in understanding how these external factors interact and affect purchasing decisions of students as representatives of future consumers.

## 2. Methods

This study employs a descriptive–analytical qualitative approach with a constructivist paradigm to analyze the effect of external PESTEL factors (political, economic, social, technological, environmental, and legal) on purchasing decisions of Scarlett Whitening products among students of the University of Sumatera Utara through the Shopee platform. This approach was selected to gain an in-depth understanding of how students as digital natives construct their perceptions of various external stimuli and how these perceptions affect each stage of the purchasing decision-making process. The study was conducted at the University of Sumatera Utara during October–December 2025 and involved students from various faculties in order to obtain diverse and representative perspectives. Informants were selected using purposive sampling based on specific criteria, including online shopping experience, interest in beauty products, and intensive digital activity, resulting in 28 informants representing variations in academic background, semester level, and gender.

Data collection was carried out through a multi-method approach, including in-depth interviews, focus group discussions (FGDs), participatory observation, and digital documentation, to ensure data depth while enabling triangulation to enhance the validity of the findings. Data analysis employed the Miles and Huberman model, which includes data reduction, data display in the form of a PESTEL–purchasing decision stage analysis matrix, and conclusion drawing and verification. Data trustworthiness was ensured through tests of credibility, transferability, dependability, and confirmability using triangulation techniques, member checking, audit trails, and peer debriefing. This integrative approach enables a comprehensive understanding of the mechanisms and interactions of external factors in shaping the behavior of digital native consumers within the e-commerce ecosystem.

## 3. Results and Discussion

### Results

#### *Overview of the Research Object*

This study involved 28 active students of the University of Sumatera Utara who were selected through purposive sampling with strict criteria to ensure data depth and relevance. The informants were students in semesters 3–8, aged 19–23 years, classified as the digital native generation, with at least five online shopping experiences on Shopee within the last six months, who had purchased or were interested in beauty products, particularly Scarlett Whitening, and were actively using social media as a source of purchasing information. In addition, informants were confirmed to have adequate internet access, were willing to participate in all stages of the study, and were able to clearly communicate their shopping experiences, so that the data obtained reflect the consumer decision-making process of digital natives in a comprehensive manner.

The characteristics of the informants indicate diversity in faculty background, semester level, and gender with a relatively balanced distribution, with the majority originating from the Faculty of Economics and Business (17.9%), junior category (42.9%), and female (78.6%) as the main market segment for skincare products. The variation in academic backgrounds ranging from economics, social sciences, natural sciences, medicine, engineering, law, to cultural studies provides diverse perspectives related to economic, social, health, technological, legal, and cultural considerations in purchasing decisions. This diversity is expected to generate a comprehensive understanding of external factors affecting purchasing decisions of Scarlett Whitening products through the Shopee platform.

### ***Research Context***

The research context shows that Scarlett Whitening is a local skincare brand that is popular among students of the University of Sumatera Utara (USU), primarily due to its strong digital marketing strategies, affordable prices, good product availability, and the support of Shopee features such as official stores, consumer reviews, promotions, and transaction security guarantees. USU students as digital native consumers exhibit characteristics of being price-sensitive yet quality-conscious, highly active on social media, easily influenced by trends and influencers, and accustomed to conducting online information searches before making purchases, including considering product safety aspects such as BPOM authorization. Shopee has become part of the lifestyle of USU students due to ease of access, flexible shopping time, a variety of payment methods, and social interactions within the campus environment that further strengthen e-commerce adoption, so that purchasing decisions of Scarlett Whitening products are formed through a complex interaction between external factors, individual characteristics, and the digital platform ecosystem.

Purchasing patterns indicate that USU students buy a variety of Scarlett Whitening product variants, including both facial and body care products, within a price range of IDR 48,880–75,000, which is in line with students' purchasing power. Products such as Acne Serum, Sunscreen, Day Cream, Glowtensing Serum, body lotion, and bathing products are among the main choices, reflecting comprehensive skincare needs and increasing awareness of skin health. Purchase documentation also indicates a relatively high frequency of repeat purchases and a tendency to buy more than one product in a single transaction, particularly during major promotional events such as 9.9 to 12.12. This pattern signifies a good level of satisfaction and loyalty toward the brand, as well as the effectiveness of Shopee's promotion, bundling, and cross-selling strategies in driving transaction value among students as digital native consumers.

### ***The Effect of Political Factors on Purchasing Decisions of Scarlett Whitening among USU Students***

Political factors in the context of this study include digital trade policies issued by the government as well as national political stability that may affect purchasing decisions of Scarlett Whitening products through Shopee. Analysis of interview data from 28 informants across seven faculties reveals variations in students' perspectives regarding the effect of political factors in their purchasing decision-making process. These findings reveal an interesting pattern regarding how educational background and demographic characteristics shape students' understanding of and concern for regulatory and political policy aspects in the context of online commerce.

#### **a. Students' Understanding of Digital Trade Policies**

Students' understanding of digital trade policies shows clear differences across faculties, as reflected in the interview results. Students from the Faculty of Social and Political Sciences (FISIP) and the Faculty of Law demonstrate the most comprehensive understanding due to their academic backgrounds. Informant DPS (FISIP) stated that the government has regulated online trade relatively well, although enforcement remains weak, while informant NFA (Law) emphasized the existence of comprehensive regulations such as the ITE Law and consumer protection laws, despite ongoing implementation challenges. Medical students perceive policies primarily from the perspective of product safety, as expressed by informant SRD, who emphasized the importance of strict supervision of health-related products. Engineering students assess policies from the perspective of infrastructure and technical readiness. In contrast, students from the Faculty of Economics and Business, the Faculty of Mathematics and Natural Sciences, and the Faculty of Cultural Sciences tend to adopt a more pragmatic stance and have limited understanding, with informants RNA, LMA, and AKP acknowledging that they do not follow policy details as long as platforms such as Shopee are secure and function properly. Consequently, their trust relies more on platform reputation and user experience than on explicit understanding of digital trade regulations.

#### **b. The Effect of Consumer Protection Regulations on Transaction Trust**

Online consumer protection regulations constitute the most tangible political aspect affecting students' trust in transacting on Shopee, although awareness levels vary across faculties. Students from the Faculty of Law, FISIP, and the Faculty of Medicine

show the highest appreciation, as they perceive regulations as a legal safeguard and security guarantee. Informant NFA stated that the existence of consumer protection laws increases confidence in transactions; informant DPS noted that Shopee's compliance with regulations enhances a sense of security; and informant SRD viewed regulations as health protection in purchasing skincare products. Conversely, students from other faculties tend to interpret regulations pragmatically through platform features such as money-back guarantees and complaint mechanisms. Informants RNA, LMA, AFR, and AKP emphasized that their trust is more strongly built by reputation, technological systems, and positive experiences using Shopee. These findings indicate that consumer protection regulations function as a foundation of trust; however, for most students, actual trust is more strongly supported by the tangible implementation of regulations at the platform level and everyday user experience.

**c. Stability of Digital Policies and Online Purchasing Decisions**

The stability of digital policies is perceived differently by students and affects purchasing decisions indirectly, depending on their level of political and regulatory understanding. Students from the Faculty of Law and FISIP consider policy stability an important factor because it provides legal certainty and transactional comfort, as expressed by informant NFA, who emphasized that regulatory instability creates risk, and informant DPS, who noted that policy changes may affect prices and transaction security. Medical students perceive policy stability more pragmatically, considering it important insofar as it ensures platform reliability without significant disruption. In contrast, the majority of students from the Faculty of Economics and Business, the Faculty of Mathematics and Natural Sciences, Engineering, and Cultural Sciences do not prioritize this aspect as long as the application functions normally, securely, and efficiently, as stated by informants RNA, LMA, AFR, and AKP. These findings suggest that digital policy stability serves as a maintenance factor; instability can reduce trust, yet stability itself does not directly drive purchasing decisions compared to more tangible factors such as price, product quality, and user experience.

**d. National Political Stability and Trust in Online Transactions**

National political stability exerts the smallest effect on students' purchasing decisions, as it is generally perceived as having no direct impact on daily online shopping activities for beauty products. Informants from various faculties, including FISIP and Law, acknowledged that political stability only affects transactions indirectly through economic stability and legal certainty, but does not become a consideration in low-value daily transactions. Students would only consider political factors if a major crisis disrupted the economy or digital infrastructure, as stated by informants DPS, NFA, and SRD. These findings indicate that within a relatively stable national political context, students separate political issues from everyday consumption and are more influenced by direct factors such as price, reviews, and social influence.

**e. The Effect of Political Issues on Budget Allocation for Beauty Products**

National political issues are shown to have a very limited effect on students' budget allocation for beauty products, as most informants have established skincare budgets as relatively fixed routine expenditures. Students from FISIP and Law acknowledged that political issues only affect spending if they directly impact economic conditions, such as price increases or reduced purchasing power; however, skincare remains prioritized as it has become part of personal needs and lifestyle, as stated by informants DPS and NFA. Medical students and the majority of students from other faculties emphasized that skincare budgets are unaffected by political issues unless a major economic crisis occurs, as these budgets are mentally separated from other expenditures. These findings suggest that skincare consumption is relatively resilient to political turbulence and only changes when political issues translate into tangible economic pressure that forces a comprehensive reallocation of budgets.

**f. Patterns of the Effect of Political Factors Across the Purchasing Decision Stages**

The analysis indicates that political factors exert the greatest effect at the stage of alternative evaluation and purchasing decisions, while their effect is minimal at the need recognition stage, which is more strongly driven by social factors and media exposure. During the information search stage, only students with high regulatory literacy such as

those from the Faculty of Law, FISIP, and the Faculty of Medicine actively incorporate aspects of legal compliance and BPOM authorization, whereas most other students rely more on reviews, price, and social recommendations. The effect of political factors becomes most evident at the purchasing decision stage through consumer protection mechanisms such as money-back guarantees, which enhance a sense of security and willingness to complete transactions. At the post-purchase stage, successful dispute resolution experiences strengthen students' trust in the platform and increase their awareness of the importance of consumer protection regulations.

### ***The Effect of Economic Factors on Purchasing Decisions of Scarlett Whitening among USU Students***

Economic factors are proven to have a very strong and direct effect on purchasing decisions of Scarlett Whitening products by USU students through the Shopee platform. Based on interviews with 28 informants, purchasing power, price sensitivity, and the availability of promotions consistently emerge as the main considerations in the decision making process. Unlike political factors, whose effect is indirect, economic factors appear as tangible, measurable, and decisive considerations, particularly given students' financial limitations. Despite differences in faculty background and economic conditions, almost all informants demonstrate high sensitivity to prices, discounts, and product affordability relative to their financial capacity. Accordingly, economic factors become the dominant determinant in beauty product purchasing patterns among students.

#### **a. Purchasing Power and Student Budget Allocation for Skincare Products**

Students' purchasing power toward skincare products shows variation; however, the majority perceive Scarlett Whitening as affordable, with prices ranging from IDR 30,000 to IDR 100,000 per product. Interviews reveal that students from various faculties generally allocate a specific budget for skincare of approximately IDR 100,000 to IDR 200,000 per month, or around 10 to 15 percent of their allowance, as stated by informants RNA, DPS, and LMA, who considered Scarlett to be "within budget." Students with additional income, such as informant SRD from Medicine and informant AFR from Engineering, demonstrate greater purchasing flexibility, both for personal use and for buying products for close relatives. These findings indicate that skincare has been positioned as a planned routine necessity rather than an impulsive expense. Overall, Scarlett's affordable pricing strategy aligns with student budgeting patterns and supports broad market penetration within the campus environment.

#### **b. The Effect of Allowance and Income on Purchasing Decisions**

Allowance and income are proven to strongly have an effect on the timing and frequency of purchasing Scarlett Whitening products, with most students adjusting their purchases based on monthly fund availability. Interviews show a clear cyclical pattern, in which purchases are more frequently made at the beginning of the month when allowances are received and tend to be postponed toward the end of the month when funds decrease. Although skincare is perceived as a routine necessity, purchasing remains flexible and can be delayed in accordance with priority needs and financial conditions. These findings confirm that economic factors are direct and decisive, while students develop adaptive strategies such as budgeting, waiting for promotions, or seeking more affordable alternatives.

#### **c. Price Sensitivity and Assessment of Price to Quality Suitability**

Students' assessments of price to quality suitability for Scarlett Whitening show a very strong consensus that the products offer excellent value for the price paid. Across faculty backgrounds, students perceive product quality, usage results, packaging, ingredients, and BPOM legality as equal to or exceeding expectations relative to the affordable price level. This value for money perception is reinforced through comparisons with other brands, both local and imported, which are considered more expensive without significant quality advantages. These findings indicate that Scarlett's pricing strategy successfully builds both satisfaction and long term loyalty among students as consumers.

#### **d. The Effect of Promotions, Discounts, and Cash Back on Purchasing Decisions**

Promotions, discounts, and cash back are proven to have a very strong and consistent effect on purchasing decisions across all faculties and often become the

primary determinants of purchase timing and frequency for Scarlett Whitening on Shopee. Interviews indicate that students actively wait for major promotional events such as 9.9, 11.11, and 12.12 because discounts of 30 to 50 percent are considered highly significant for their budgets, while cash back features are viewed as part of shopping strategies for subsequent transactions. Promotions not only reduce financial barriers but also psychological barriers, making purchasing decisions faster and sometimes spontaneous, even among students with higher purchasing power. These findings confirm that Shopee's promotional strategies function as key triggers of purchasing decisions and as planning tools for short and medium term consumption among students.

**e. The Effect of Price Increases and Macroeconomic Conditions on Skincare Consumption**

Price increases and macroeconomic conditions are shown to moderately have an effect on student skincare consumption patterns, even though this category is regarded as important and routine. Interview results indicate that students respond to economic pressure by becoming more selective, prioritizing basic products such as cleansers and moisturizers, and postponing or reducing purchases of additional non essential products. This effect is moderated by family economic conditions and the presence of additional income, whereby students from more stable households or those with side income tend to be more resilient to price increases. These findings demonstrate that students behave rationally and adaptively toward economic changes, striving to maintain basic skincare routines while adjusting consumption strategies through saving, prioritization, and promotion utilization.

**f. Patterns of the Effect of Economic Factors Across Purchasing Decision Stages**

Analysis shows that economic factors have an effect that is very strong and explicit across all stages of purchasing decisions, from need recognition to post purchase evaluation. At the initial stage, price affordability becomes a key prerequisite for skincare needs to develop into purchase intention, as expressed by informants who described Scarlett prices as "affordable and worth trying." During the information search and alternative evaluation stages, students actively compare prices across stores, assess value for money, and place price as a primary criterion or alongside other criteria such as ingredients, reviews, and legality, with emphasis varying by faculty background.

At the purchasing decision stage, economic factors, particularly promotions and budget suitability, serve as final triggers that determine whether transactions are completed or postponed. At the post purchase stage, satisfaction is strongly determined by the perception that the product is "worth the money spent." Students from Economics and Business are the most strategic, focusing on price and promotions; students from Social and Political Sciences, Mathematics and Natural Sciences, and Law emphasize relative value evaluation between price and quality; while Medical students prioritize quality and safety with lower price sensitivity. Overall, price and promotions function as dominant factors regulating the timing, frequency, and sustainability of Scarlett Whitening purchases across all student groups.

**g. The Effect of Social Factors on Purchasing Decisions of Scarlett Whitening among USU Students**

Social factors, which include social media exposure, reference groups, and lifestyle trends, are proven to have a very strong and direct effect on purchasing decisions of Scarlett Whitening through the Shopee platform among USU students. Based on interviews with 28 informants, these factors act as active drivers that stimulate interest and accelerate purchasing decisions, unlike political factors that are indirect and economic factors that function primarily as constraints. Intense exposure to social media content, peer recommendations, and the urge to follow beauty trends make students highly responsive to social cues when determining product choices. Accordingly, social factors become the main determinants shaping student preferences and purchasing behavior in skincare products.

**h. The Effect of Beauty Influencer Content on Purchase Interest**

The effect of beauty influencer content on interest in purchasing Scarlett Whitening among USU students is significant but varies, with influence levels ranging from 40 to 70 percent depending on faculty background and critical awareness. Students

from Economics and Cultural Sciences show the highest effect due to intensive exposure on TikTok and Instagram and detailed, relatable content, as expressed by informant AKP, who stated that content creator reviews “really spark my interest.” In contrast, students from Political Science, Law, and Medicine are more critical and selective, tending to verify review authenticity and distinguish between paid promotions and honest reviews, as stated by informant DPS, who does “not immediately believe.” Students from Mathematics and Natural Sciences treat influencer content as an initial trigger of interest while still conducting further research, whereas Engineering students experience indirect effects through requests from partners or family members. Overall, influencer content effectively increases purchase interest, but its effect is moderated by critical literacy, perceived authenticity, and students’ educational backgrounds.

**i. The Effect of Testimonials and User Reviews on Purchasing Decisions**

Testimonials and user reviews are proven to have a very strong and consistent effect on students’ purchasing decisions and are even more trusted than influencer content because they are perceived as free from commercial motives. Students across faculties actively read reviews, analyze ratings, sales volume, and real photos, including before and after usage, and examine detailed experiences such as effectiveness, skin compatibility, and potential side effects, as stated by informant RNA, who “always reads reviews before paying.” Students from Mathematics and Natural Sciences and Medicine treat reviews as empirical and clinical evidence, Law students interpret them as credible testimonial evidence, and Cultural Studies students engage narratively with other users’ experiences. Overall, user reviews function as the most effective risk reduction mechanism by providing concrete evidence, detailed information, and collective experience patterns relevant to prospective buyers’ personal conditions.

**j. The Importance of Peer Recommendations in Skincare Purchasing Decisions**

Peer recommendations are proven to be among the strongest factors in skincare purchasing decisions among students because they are based on interpersonal trust, absence of commercial motives, and direct visual evidence of usage results. Students from various faculties state that directly observing skin improvements in friends and hearing honest experiences significantly reduces perceived risk and increases purchase confidence, as expressed by informant RNA, who stated that peer recommendations are “more trustworthy” because the product has been tried firsthand. Contextual relevance further strengthens this effect, for example, students from Mathematics and Natural Sciences and Medicine place greater trust in recommendations from peers with similar backgrounds and challenges, as they are perceived as more critical and competent in evaluating ingredients and safety. Overall, peer recommendations function as social validation that shapes group norms, triggers conformity, and accelerates purchasing decisions more effectively than advertisements or digital promotional content.

**k. Peer Pressure and the Effect of Social Circles on Skincare Consumption**

Although most students state that they do not experience direct pressure from their social environment to use specific skincare products, interview results reveal subtle yet strong social effects in shaping consumption behavior. These effects emerge through normalization of self care culture within peer groups, social learning from observing friends’ usage outcomes, and the desire not to be left behind, as expressed by informant RNA, who felt encouraged to try products “so as not to miss out,” despite the absence of coercion. In certain contexts, such as the Faculties of Medicine and Law, these effects are reinforced by professional expectations related to neat and well maintained appearance, while in Cultural Studies, social effects are strengthened by high aesthetic standards. Thus, although explicit pressure rarely occurs, peer effects operate implicitly through group norms, professional identity, and social aspirations that effectively encourage skincare product adoption.

**l. Frequency of Following Beauty Trends and Consumption Behavior**



Students' frequency of following beauty trends shows considerable variation, ranging from highly enthusiastic to highly selective, reflecting differences in personal values, educational background, and financial constraints. Students from Cultural Studies tend to follow trends most frequently, viewing them as interesting cultural phenomena, while Medical students and those from Mathematics and Natural Sciences are the most selective, prioritizing scientific validity and safety. Students from Economics, Social and Political Sciences, and Law occupy a moderate position, adopting a rational approach by following viral trends only when aligned with needs and financial capacity. These findings indicate that beauty trends play an important role in shaping interest, but their adoption remains mediated by rational considerations and individual values.

**m. Orientation toward Appearance and Skincare Consumption**

Students' orientation toward appearance is proven to have a strong effect on skincare consumption, with most informants viewing appearance as an important aspect of self confidence, health, and professionalism. Students from Economics, Social and Political Sciences, and Law tend to perceive skincare as self investment and professional image management, while students from Mathematics and Natural Sciences and Medicine emphasize it as part of health and professional standards. Meanwhile, students from Cultural Studies view appearance as a form of self expression and cultural participation with aesthetic value. These findings indicate that skincare consumption among students is driven by diverse and complex motivations that extend beyond mere vanity.

**n. Patterns of the Effect of Social Factors Across Purchasing Decision Stages**

The effect of social factors is proven to be very strong and active across all stages of purchasing decisions, from need recognition to post purchase evaluation, functioning as the primary driver that surpasses the role of economic factors as constraints. At the initial stage, observation of peers and exposure to social media trigger need awareness. During the information search and alternative evaluation stages, user reviews and peer recommendations become the most trusted references. At the purchasing decision stage, consistency of positive reviews often becomes the final determinant that can accelerate or even cancel transactions. After purchase, satisfied students tend to share their experiences through reviews and social media, creating a continuous cycle of social effects in shaping purchasing decisions among other students.

***The Effect of Technological Factors on the Purchase Decision of Scarlett Whitening among USU Students***

Technological factors in this study encompass the ease of use of the Shopee platform, digital system security, and various innovative features that affect the purchase decision of Scarlett Whitening products. An analysis of interview data from 28 informants across seven faculties indicates that technology functions as a primary enabling force that facilitates online purchasing behavior. The findings reveal a distinctive pattern showing how academic background shapes the way students evaluate and utilize technological aspects throughout the purchase decision process.

**a. Students' Evaluation of the Ease of Use of the Shopee Platform**

Students' evaluation of the ease of use of the Shopee platform demonstrates consistently high appreciation across all faculties, although evaluative perspectives vary according to academic background. Engineering students assess Shopee as superior in technical aspects such as system responsiveness, speed, and structural reliability, while Economics and Business students emphasize the efficiency of the shopping flow from product search to payment, which supports convenience and repeat purchases. Students from Cultural Studies highlight aesthetic appeal, emotional experience, and gamification features that make shopping more engaging. Meanwhile, students from Law, Medicine, Natural Sciences, and Social and Political Sciences stress clarity, simplicity, and time efficiency aligned with their academic routines. Overall, Shopee's ease of use successfully reduces technological barriers, increases acceptance across different levels of digital literacy, and strongly contributes to the intensity and sustainability of students' online transactions.

**b. Effectiveness of Product Search and Filtering Features**

The effectiveness of Shopee's product search and filtering features is rated very

highly by all informants, as these features significantly accelerate product discovery and reduce shopping time. Engineering students appreciate the technical quality and robustness of the search system, while Economics and Business students focus on time efficiency and ease of comparing prices, ratings, and store locations. Students from Cultural Studies, Law, Natural Sciences, Medicine, and Social and Political Sciences perceive these features as facilitating purchase decisions through structured, accurate, and non confusing filtering processes. Overall, Shopee's search and filtering features reduce consumers' cognitive load, enhance convenience, and increase the likelihood of purchase.

**c. Trust in Digital Payment System Security**

Students' trust in Shopee's digital payment system security is relatively high and serves as a fundamental basis for their willingness to conduct online transactions. Engineering and Law students develop trust based on technical understanding and regulatory compliance, while students from other faculties rely more on positive user experiences and visible security mechanisms such as multi layer verification, biometric authentication, and escrow payment systems. Consistent transaction experiences without security incidents and clear buyer protection policies further strengthen financial confidence. Overall, the combination of technical security, procedural protection, and a positive track record leads students to perceive Shopee as a secure and trustworthy payment platform.

**d. Perceptions of Personal Data Protection**

Students' perceptions of personal data protection on Shopee reflect varying levels of awareness, although the platform is generally considered sufficiently secure. Students from Engineering, Law, Medicine, and Social and Political Sciences tend to be more critical and proactive by applying additional protective measures such as strong passwords, two factor authentication, and cautious data sharing practices. In contrast, students from other faculties rely primarily on positive experiences and the absence of data breaches as the basis of their trust. These findings indicate that digital literacy and privacy awareness play an important role in shaping users' precautionary attitudes, complementing the platform's responsibility to safeguard personal data.

**e. The Effect of Shopee Live Features on the Purchase Decisions**

Shopee Live features exert varying effects on students' purchase decisions, but the effect is significant among those who actively engage with live streaming sessions. Students who enjoy interactive and entertaining formats, particularly from the Faculty of Cultural Studies and the Faculty of Economics and Business, show a higher tendency toward impulse buying due to substantial discounts, bonuses, and time limited offers. Conversely, students with demanding schedules or more rational consumption patterns tend to engage less frequently, although they may still be motivated to purchase when exposed to exceptionally attractive offers. Overall, Shopee Live functions effectively as a trigger for impulse buying through the combination of entertainment, urgency, and price incentives.

**f. Effectiveness of the Product Recommendation System**

Shopee's product recommendation system is perceived as highly effective by most informants, as it presents relevant products based on users' search and purchase histories. Students across faculties acknowledge that these recommendations facilitate the discovery of new products, including Scarlett Whitening variants previously unfamiliar to them. However, this effectiveness also represents a double edged mechanism, as it frequently stimulates impulse purchases and unplanned spending. Students with technical, social, and legal backgrounds demonstrate greater critical awareness of the persuasive nature of recommendation systems and attempt to regulate their shopping behavior. Overall, Shopee's recommendation system enhances personalized and relevant shopping experiences while simultaneously increasing the risk of impulsive consumption without adequate self control.

**g. Patterns of the Effect of Technological Factors across the Purchase Decision Stages**

Technological factors exert a very strong and consistent effect across all stages of the purchase decision, from need recognition to post purchase evaluation. Technology facilitates product exposure through algorithms and digital media, enables comprehensive

information search, and supports systematic evaluation of alternatives through comparison features, ratings, and reviews. At the purchase decision stage, transaction convenience, system security, refund guarantees, and features such as Shopee Live significantly accelerate and even trigger impulse purchases. In the post purchase stage, technology encourages experience sharing, review submission, and efficient complaint resolution, which subsequently affect other consumers. Overall, technology functions not merely as a supporting tool but as an active driver that shapes preferences, reduces perceived risk, and strengthens students' purchase decisions on the Shopee platform.

### ***The Effect of Environmental Factors on the Purchase Decision of Scarlett Whitening among USU Students***

Environmental factors in this study include awareness of environmental issues, concern for recyclable packaging, consideration of carbon footprints from delivery, and brand commitment to environmental sustainability. Analysis of interview data from 28 informants reveals a pattern that differs markedly from other factors discussed previously. While economic and social factors demonstrate a very strong and direct effect, environmental factors exhibit a very limited effect and occupy the lowest position in the hierarchy of students' purchase considerations. These findings reveal a significant gap between theoretical awareness of environmental issues and their practical application in everyday consumption behavior.

#### **a. Environmental Awareness and the Importance of Eco Friendly Aspects in Product Selection**

Students' awareness of environmental issues is relatively high; however, eco friendly aspects have not yet become primary criteria in skincare product purchase decisions. In general, price, quality, safety, and product effectiveness remain the dominant priorities, while environmental aspects function only as supplementary considerations when product options are relatively equivalent. This gap is influenced by structural barriers such as higher prices of environmentally friendly products, limited availability, and the lack of easily accessible information regarding the environmental impact of products. In addition, environmental benefits are perceived as indirect and collective in nature, making them less competitive than economic and functional benefits that are personally and immediately experienced. These findings indicate a clear gap between students' pro environmental values and their actual consumption behavior, which remains largely pragmatic.

#### **b. The Effect of Recyclable Packaging on Product Choice**

Recyclable packaging is shown to have a very limited effect on students' product choices. Although it is normatively perceived as a positive attribute and an added value, it rarely functions as a determining factor in purchase decisions. Across faculties, sustainable packaging is consistently positioned as peripheral in the hierarchy of considerations, far below product quality, price, safety, and core functionality. Packaging is primarily understood as physical protection rather than as an attribute with intrinsic environmental value. Environmental awareness may appear in the form of symbolic appreciation or psychological satisfaction, but it is not strong enough to outweigh pragmatic considerations, particularly when confronted with budget constraints, perceptions of product quality, and weak recycling infrastructure and practices that limit the tangible realization of sustainable packaging benefits. As a result, eco friendly packaging functions mainly as an added value or tie breaking factor when other variables are equal, rather than as a primary criterion, leaving its overall effect on students' consumption behavior minimal.

#### **c. Consideration of Carbon Footprints from Delivery in Online Shopping**

Consideration of carbon footprints from delivery in online shopping demonstrates a very low level of awareness and effect on students' purchase decisions. Although some informants conceptually understand the existence of environmental impacts, such awareness is rarely translated into consistent consumption behavior. Across faculties, carbon footprints are perceived as abstract, intangible, and less relevant than practical needs such as delivery speed, security, and convenience. Consequently, they are often disregarded when faced with urgent needs or promotional incentives. The perception that individual impact is negligible, the tendency to shift responsibility to

companies or regulators, and the lack of clear information and concrete options to reduce delivery emissions further weaken motivation for behavioral change. As a result, despite normative aspirations to behave more sustainably, consideration of carbon footprints generally remains an idealized discourse rather than a factor that genuinely determines students' online shopping practices.

**d. The Effect of Brand Environmental Commitment on Consumer Preferences**

Brand commitment to environmental sustainability is found to have a very limited effect on students' consumer preferences. Although it is normatively appreciated and perceived as capable of enhancing brand image, this aspect rarely serves as a determining factor in purchase decisions. Across faculties, environmental commitment is consistently positioned as an added value or bonus that is only considered after primary prerequisites such as product quality, performance, safety, and price are fulfilled. When direct trade offs occur, functional interests and personal benefits clearly outweigh environmental values. Skepticism toward sustainability claims, limited verifiable information, and the tendency to view environmental responsibility as primarily the domain of corporations further reduce the weight of environmental commitment in the decision making process. Consequently, although awareness and appreciation of environmentally responsible brands exist, such commitment is not strong enough to stand alone as a reason for purchase and remains subordinate to students' pragmatic considerations.

**e. Patterns of the Effect of Environmental Factors across the Purchase Decision Stages**

Integrated analysis of environmental factors across all stages of the purchase decision indicates that environmental aspects play almost no active role in shaping students' purchase decisions regarding Scarlett Whitening. This applies to the stages of need recognition, information search, evaluation of alternatives, purchase decision, post purchase evaluation, and experience sharing. At every stage, key triggers and considerations are consistently dominated by social factors such as peer recommendations and social media, economic factors such as price, promotions, and affordability, and functional and technological factors including safety, ingredients, BPOM certification, reviews, and evidence of product effectiveness. Environmental aspects do not emerge as criteria that are actively sought, evaluated, or shared. This pattern is relatively uniform across faculties, including among students who academically possess knowledge of environmental and health issues, revealing a clear gap between normative sustainability awareness and its application in everyday consumption practices. Thus, environmental factors function only as marginal and hypothetical considerations that may become relevant if all other factors are equal, a condition that is rarely achieved in practice. Accordingly, the effect of environmental factors on students' purchase decisions can be classified as very minimal.

***The Effect of Legal Factors on the Purchase Decision of Scarlett Whitening among USU Students***

Legal factors in this study include awareness of product legality, understanding of BPOM certification, protection of consumer rights, and awareness of the legal consequences of purchasing illegal products. Analysis of interview data from 28 informants across seven faculties indicates that legal factors function as a basic prerequisite that must be fulfilled before a product is considered for purchase. These findings reveal an interesting pattern regarding how educational background shapes the level of legal awareness and the way students integrate legality considerations into their purchase decisions.

**a. Students' Awareness of the Importance of Product Legality**

Students' awareness of the importance of product legality shows clear variation across faculties and is strongly influenced by educational background and academic exposure. Students from the Faculty of Law and the Faculty of Medicine position legality, particularly BPOM certification, as an absolute prerequisite, as it is understood not only as a guarantee of quality but also as legal protection and health security against the risks of harmful illegal products. Students from the Faculty of Social and Political Sciences demonstrate relatively high awareness by interpreting legality as a form of state protection and consumer responsibility in supporting regulatory systems. In contrast, students from the Faculty of Economics and Business, MIPA, Engineering, and Cultural Studies

generally acknowledge the importance of legality but adopt a more practical and surface level approach, relying on indirect indicators such as store reputation, user ratings, or trust in official platforms without actively verifying BPOM certification. These findings confirm that product legality literacy is uneven and shaped by disciplinary orientation, revealing gaps in knowledge and verification practices among students.

**b. Understanding and Verification of BPOM Certification**

Understanding and verification practices related to BPOM certification among students reveal a clear gap that is strongly influenced by educational background. Students from the Faculty of Law and the Faculty of Medicine, as well as some students from MIPA, tend to conduct systematic verification by cross checking BPOM registration numbers through official databases or the Cek BPOM application, including examining license validity periods and product recall histories. This behavior is driven by legal awareness, health considerations, and evidence based orientations. In contrast, students from the Faculty of Economics and Business, Engineering, and Cultural Studies generally perform minimal verification by only checking for the BPOM logo or relying on store reputation, high ratings, and trust in e commerce platforms without directly verifying the authenticity of registration numbers. Students from the Faculty of Social and Political Sciences occupy a moderate position, engaging in limited but inconsistent verification efforts. These findings highlight low BPOM verification literacy outside the fields of health and law, as well as strong dependence on assumptions and trust proxies rather than accurate and data based legality verification practices.

**c. Understanding of Consumer Rights in Online Transactions**

Students' understanding of consumer rights in online transactions demonstrates a sharp disparity across educational backgrounds. Students from the Faculty of Law possess the most comprehensive and legally grounded understanding, encompassing the right to accurate information, safety, choice, complaint mechanisms, compensation, and refunds, as well as awareness of seller and e commerce platform obligations in dispute resolution. Students from the Faculty of Social and Political Sciences occupy an intermediate level with practical and functional understanding, particularly regarding complaint rights and refund mechanisms. In contrast, most students from other faculties understand consumer rights in a limited and pragmatic manner, often equating them with platform features and policies such as those provided by Shopee, rather than as legal rights protected by law. Heavy reliance on platform mechanisms places consumers in a vulnerable position when policies change or protections are not optimally enforced. These findings indicate low consumer rights literacy outside legal education and underscore the need for stronger consumer education so that students can assert their rights consciously and independently in online transactions.

**d. Awareness of Legal Risks in Purchasing Illegal Products**

Students' awareness of the legal risks associated with purchasing illegal products is very low, as most informants only recognize health related impacts without realizing the legal consequences and lack of legal protection when using uncertified products. Students from the Faculty of Law, as well as some students from the Faculty of Medicine, demonstrate more comprehensive understanding by recognizing that the use of illegal products not only poses health risks but also places consumers in a legally vulnerable position due to the absence of legal grounds for compensation claims and indirect support for illegal economic practices. In contrast, students from other faculties generally do not recognize this legal dimension and perceive the risks of purchasing illegal products as limited solely to physical side effects. This gap reflects limited consumer legal literacy and public education that emphasizes health risks more than legal implications, leaving many consumers unaware of the legal vulnerabilities inherent in purchasing illegal products.

**e. The Effect of Trust in Platform Consumer Protection Systems**

Students' trust in consumer protection systems provided by e commerce platforms is relatively high, but it is based on varying levels of understanding. Students from the Faculty of Law demonstrate the strongest and most rational trust because they understand that protection mechanisms such as refund guarantees and complaint systems represent the implementation of legal obligations imposed on platforms by consumer

protection and electronic commerce regulations and can be legally enforced if not fulfilled. Students from the Faculty of Social and Political Sciences and other faculties tend to build trust based on platform reputation, personal or shared experiences, and the visible presence of protection features, without deep understanding of the legal foundations or alternative dispute resolution mechanisms outside the platform. Reliance on reputation and internal policies creates a sense of comfort in transactions but simultaneously increases vulnerability when platforms change policies or fail to meet their responsibilities. These findings indicate that high trust in platforms is not always accompanied by strong consumer legal literacy, potentially reducing vigilance and students' ability to actively assert their rights.

**f. Patterns of the Effect of Legal Factors across the Purchase Decision Stages**

Analysis of the effect of legal factors across all stages of the purchase decision indicates that legal aspects do not trigger need recognition but become increasingly significant during the information search and evaluation of alternatives, primarily as filtering criteria to determine product eligibility. Need recognition is generally driven by social factors and personal aspirations, while legality considerations emerge when students begin researching and comparing alternatives. Students from the Faculty of Law and the Faculty of Medicine position legality, particularly BPOM certification, as a minimum requirement that cannot be compromised, leading to immediate elimination of non compliant products. In contrast, students from other faculties tend to treat legal aspects as complementary considerations and often assume legality based on platform or seller reputation. At the purchase decision and post purchase stages, platform consumer protection mechanisms play an important role in reducing perceived risk and increasing trust, even among students with limited legal literacy. Overall, legal factors function as a selective foundation whose strength is highly dependent on educational background and legal awareness, while simultaneously highlighting gaps in consumer legal literacy that affect students' capacity to independently protect themselves in online transactions.

***Comparative Analysis of the Dominance of PESTEL Factors in Purchase Decisions***

The researchers conducted an analysis of all interview data by examining the frequency of mention, the intensity of the effect, and the consistency of the effect of each factor across different stages of the purchase decision process. The analysis also considered variations in effect patterns based on the faculty background of the informants. The findings are presented in the form of a comparative matrix to facilitate the identification of dominant factor patterns.

**a. Matrix of PESTEL Factor Dominance Based on Faculty**

**Table 3.** Matrix of PESTEL Factor Dominance in Purchase Decisions Based on Faculty

Faculty	Political	Economy	Social	Technology	Environment	Law	Most Dominant Factor	Most Affected Stage
Economics & Business	Very high	High	High	Very Low	Low	–	Economic	Evaluation of Alternatives and Purchase Decision
Faculty of Social and Political Sciences	Moderate	High	Very high	–	–	–	Social	Need Recognition
Mathematics and Natural Sciences	Low	High	Very high	High	Low	–	Social	Information Search and Evaluation of Alternatives
Law	High	Moderate	High	Moderate	Low	Very high	Legal	Evaluation of Alternatives
Medical	Moderate	Moderate	High	Moderate	Low	Very high	Legal	Evaluation of Alternatives

Faculty	Political	Economy	Social	Technology	Environment	Law	Most Dominant Factor	Most Affected Stage
Technique	Low	High	High	Very high	Very Low	Moderate	Technological	Need Recognition
Cultural Sciences	Low	High	Very high	High	Very Low	Low	Social	Need Recognition and Information Search

Scale Description:

Very High : The factor is highly dominant and explicitly mentioned as a primary consideration.

High : The factor is quite dominant and frequently mentioned as an important consideration.

Moderate : The factor is considered but not a top priority.

Low : The factor is rarely mentioned or serves only as a complementary consideration.

Very Low : The factor is almost never mentioned or has no effect.

The matrix above reveals an interesting pattern regarding how educational background shapes which factors become most dominant in purchase decisions. Students from different faculties demonstrate distinct priorities in considering external factors.

#### b. Overall Analysis of Factor Dominance

The analysis of PESTEL factor dominance indicates that social factors occupy the most dominant and consistent position in affecting students' purchase decisions, followed by economic and technological factors. Social factors actively operate across all stages of the purchase decision process, from need recognition to post purchase behavior, through mechanisms such as peer recommendations, user reviews, influencers, and community discussions. These social mechanisms are sufficiently powerful to cancel transactions that are already economically feasible. Economic factors rank second as constraining elements that determine the realization of purchases, with price and promotions functioning as final triggers that convert intention into action, although sensitivity varies across faculties and purchasing power levels. Technological factors rank third as enabling factors that facilitate the entire process through ease of information access, price comparison, review analysis, transaction systems, and consumer protection mechanisms, while simultaneously strengthening the effect of social and economic factors.

In contrast, legal, political, and environmental factors exhibit lower and uneven effects. Legal factors function as filtering criteria whose importance is highly dependent on educational background, with law and medical students positioning legality as a non negotiable requirement, while students from other faculties treat it as a complementary consideration and rely on trust proxies such as platform reputation. Political factors operate in the background through regulatory frameworks that create a sense of transactional security but are rarely recognized explicitly by students. Environmental factors occupy the final position with the weakest effect, reflecting a sharp gap between normative awareness and actual consumption practices, as sustainability considerations are almost never used as active criteria at any stage of the purchase decision process. These findings confirm that students' purchase decisions are dominated by social, economic, and technological considerations that are direct and pragmatic in nature, while legal, political, and especially environmental factors remain secondary and contextual.

#### c. Variations Based on Demographic Characteristics

Further analysis reveals that factor dominance also varies according to the demographic characteristics of the informants:

- Based on Semester Level: Early year students (semesters 1 to 4) demonstrate higher sensitivity to economic factors due to limited purchasing power. Final year students (semesters 7 to 10), who often have additional income sources, show lower economic sensitivity and greater attention to quality and legal factors.

- b) Based on Gender: Although the number of male informants was limited, a pattern emerged in which male students tend to rely more heavily on technological factors in the form of objective data and systematic comparisons, while female students are more strongly influenced by social factors such as peer recommendations and influencer content.
- c) Based on Online Shopping Experience: Students with longer online shopping experience exhibit higher trust in consumer protection mechanisms and less concern about potential risks. They are also more proficient in utilizing technological features to optimize their purchase decisions.

## **Discussion**

### ***The Effect of Political Factors on Purchase Decisions***

The findings indicate that political factors affect students' purchase decisions indirectly and primarily operate at the stage of alternative evaluation and purchase decision, while their role is minimal at the need recognition stage. Students from Law, Social and Political Sciences, and Medicine demonstrate the highest level of regulatory awareness by treating BPOM compliance and consumer protection as important criteria, whereas students from other faculties tend to rely on trust in platforms and market reviews without conducting in depth regulatory verification. All informants appreciate consumer protection mechanisms such as money back guarantees because they increase a sense of transactional security; however, only law students understand these mechanisms as legal rights guaranteed by government policy. The stability of electronic commerce regulations renders the effect of political factors largely "invisible" because they have become a normalized part of the online shopping experience, with their presence only becoming apparent when problems arise. These findings highlight a gap in consumer regulatory literacy among students and underscore the need for stronger public education and greater platform transparency to ensure that political policies effectively protect consumers in a more equitable manner.

### ***The Effect of Economic Factors on Purchase Decisions***

The findings show that economic factors have a highly dominant and consistent effect across all stages of students' purchase decisions, reflecting limited purchasing power and high price sensitivity among student consumers. Students from the Faculty of Economics and Business exhibit the most strategic behavior by positioning price as the primary criterion, actively comparing prices, and waiting for promotions, while students from Social and Political Sciences, Mathematics and Natural Sciences, and Law place greater emphasis on price quality alignment. Medical students display the lowest level of price sensitivity, as they prioritize product safety and efficacy and generally possess greater financial flexibility. These variations are also influenced by semester level and individual economic conditions, with early year students being more price sensitive than final year students who have begun to earn additional income.

Promotions function as a key trigger that converts intention into actual purchase across all groups, with discounts, free shipping, and Shopee cashback effectively reducing economic barriers. The affordability of Scarlett products strengthens their position as a high value option for students, lowering perceived financial risk and increasing willingness to try. Satisfaction with the value obtained, in which product benefits are perceived as equal to or exceeding financial sacrifice, encourages repeat purchases and word of mouth recommendations, which are further reinforced through social comparison with higher priced competing brands. These findings confirm that economic factors do not operate in isolation but interact closely with social factors in shaping perceptions of value for money and students' purchase decisions.

### ***The Effect of Social Factors on Purchase Decisions***

The findings demonstrate that social factors represent the most dominant effect and operate consistently across nearly all stages of students' purchase decisions, from need recognition to post purchase behavior. Peer influence serves as a particularly strong initial trigger through direct social comparison, trusted personal recommendations, and tangible visual evidence of product results, while social media amplifies this effect through before and after content, tutorials, and creator reviews that shape beauty standards and generate fear of missing out. Social proof derived from reviews and ratings on the Shopee platform further strengthens purchase confidence, as it is perceived to represent collective wisdom that is more credible than brand claims. After purchase, the cycle of social effect continues through



experience sharing, reviews, and word of mouth recommendations, organically expanding product adoption. Overall, the need for social acceptance, the desire to remain aligned with trends, and validation from peer groups position social factors as the primary driving force that shapes, accelerates, and reinforces students' purchase decisions regarding Scarlett Whitening products.

### ***The Effect of Technological Factors on Purchase Decisions***

The findings indicate that technological factors function as key enablers that not only facilitate but also actively shape and strengthen the entire process of students' purchase decisions. The Shopee platform provides a comprehensive technological infrastructure, including intuitive interfaces, efficient search and filtering features, behavior based recommendation algorithms, social media integration, and review and price comparison systems that remove spatial and temporal barriers and accelerate the transformation of interest into purchase decisions. Features such as Shopee Live, promotional notifications, gamification, and data driven personalization create an interactive and engaging shopping experience that often encourages impulsive purchases, while payment convenience, real time shipment tracking, digital customer service, and return and refund mechanisms enhance consumer trust and perceived security.

The utilization of technology varies across faculty backgrounds, reflecting differences in cognitive styles and preferences. Engineering and Economics students tend to use data driven features, reviews, and price comparisons systematically to support rational and economically optimal decisions, whereas students from Social and Political Sciences and Cultural Studies are more attracted to social, entertainment, and interactive aspects of online shopping. Medical and Law students use technology more selectively and critically, restraining impulsive responses triggered by urgency based features. Overall, technology integrates online shopping seamlessly into students' daily lives and confirms that high levels of digital literacy enable students to maximize platform benefits in the purchase decision process.

### ***The Effect of Environmental Factors on Purchase Decisions***

The findings show that environmental factors have the weakest effect, and are nearly invisible, in students' purchase decisions, despite declarative expressions of environmental concern. None of the informants across faculties included sustainability aspects as active considerations at any stage of the purchase decision process, confirming a significant gap between awareness and actual behavior. Academic knowledge of environmental impacts among students from Mathematics and Natural Sciences, Social and Political Sciences, and Medicine is not internalized in consumption practices, as purchase decisions remain focused on direct benefits such as product effectiveness, affordability, BPOM safety, and social media popularity. Environmental concern remains abstract and non operational, and is consistently outweighed by short term priorities that provide immediate personal benefits.

The minimal effect of environmental factors is driven by several key conditions, including limited access to comparable and easily understood information, the absence of social pressure or group norms supporting environmentally friendly consumption, conflicts with students' economic constraints, and low trust in unverifiable green claims. In addition, theoretically oriented environmental education has not equipped students with practical skills to evaluate product environmental impact, while market incentive structures and ecommerce platform designs do not yet support sustainable choices. These findings suggest that behavioral change requires systemic intervention through greater information transparency, environmentally supportive platform design, the framing of sustainability as a relevant and aspirational value, and public policy support to ensure that environmentally friendly consumption becomes a rational, accessible, and valuable option for young consumers.

### ***The Effect of Legal Factors on Purchase Decisions***

The findings indicate that the effect of legal factors on students' purchase decisions varies substantially and is strongly shaped by educational background. Law and Medical students position product legality, particularly BPOM certification, as a non negotiable primary criterion because it is understood as a guarantee of safety, efficacy, and legal protection, while students from Social and Political Sciences view legal aspects as important consumer protection instruments that can be verified in a relatively simple manner. In contrast, students from other faculties tend not to prioritize legality and instead rely on market indicators such

as ratings, sales volume, and trust in platform monitoring mechanisms, revealing a gap in consumer legal literacy among students.

Nevertheless, all informants acknowledge the importance of consumer protection mechanisms provided by Shopee, particularly money back guarantees, which psychologically enhance security and willingness to transact. However, only law students recognize these protections as legal rights guaranteed by regulation rather than voluntary platform policies, resulting in a greater sense of empowerment in enforcing consumer rights. These findings emphasize the need to strengthen cross disciplinary consumer legal literacy, improve platform transparency regarding product legality, and provide practical education on consumer rights and protection mechanisms so that students as digital consumers can make safer and more responsible purchase decisions.

#### ***Dominance of PESTEL Factors in Purchase Decisions***

The findings demonstrate that social factors are the most dominant determinants in students' purchase decisions regarding Scarlett Whitening products at Universitas Sumatera Utara, followed by economic, technological, legal, political, and environmental factors. This pattern reflects the characteristics of students as digital native consumers who are highly influenced by social interaction, social media, and peer group acceptance. Social factors operate comprehensively across all stages of the purchase decision process through peer recommendations, user reviews, and social proof, while economic factors function as final filters that align interest with students' purchasing power constraints. Technological factors act as primary enablers that accelerate information access, price comparison, and transactional convenience, while legal factors show variable effects based on educational background, with law and medical students prioritizing legality. Political factors operate indirectly as consumer protection infrastructure that is rarely consciously recognized, whereas environmental factors exhibit the weakest effect due to limited social pressure, information constraints, and low immediate relevance to students' short term needs. These findings confirm that purchase decisions are primarily driven by factors with direct and immediately perceived effects.

#### **4. Conclusion**

Based on the research findings and discussion regarding the analysis of external factors affecting purchase decisions for Scarlett Whitening products through the Shopee platform among students of Universitas Sumatera Utara, the following conclusions can be drawn: 1. Political factors have an indirect effect on purchase decisions, primarily through regulatory frameworks that create trust in online transactions. Students from the Faculty of Law and the Faculty of Social and Political Sciences demonstrate higher regulatory awareness by understanding the relationship between government policies and consumer protection mechanisms. However, most students from other faculties experience the benefits of regulation without recognizing the role of political policies underlying these protections. 2. Economic factors exert a dominant effect as constraints that determine the realization of purchase transactions. Students from the Faculty of Economics and Business display the most strategic behavior in optimizing economic value, while Medical students show the lowest level of price sensitivity. Promotions act as strong triggers across all faculty groups in finalizing long considered transactions, with price sensitivity varying according to semester level and students' sources of income. 3. Social factors represent the most dominant factors with consistent effects across all stages of the purchase decision process. Peer recommendations constitute the strongest source of effect across all faculties, followed by user reviews and creator generated content. Cultural Studies students demonstrate the highest engagement with social media content, while Medical students are the most critical toward testimonials. Social effects not only trigger initial awareness but are also capable of canceling transactions even when economic factors are supportive. 4. Technological factors function as enablers that facilitate and strengthen the entire purchase decision process. Engineering students exhibit the highest level of digital literacy through systematic and data based use of technology, while students from Cultural Studies and Social and Political Sciences focus more on the social experience aspects of technology. Technology not only simplifies access to information but also actively shapes preferences through algorithms and the ease of experience sharing. 5. Environmental factors have the weakest effect on actual purchase decisions. A substantial gap exists between students' theoretical awareness of environmental issues and their application in daily

consumption behavior. This pattern is consistent across all faculties, including students from Mathematics and Natural Sciences who understand environmental impacts and Medical students who recognize the relationship between environmental health and human health. 6. Legal factors show highly variable effects depending on educational background. Law and Medical students position BPOM legality as a primary and non negotiable screening criterion, while students from other faculties regard it as an important but non dominant consideration. Platform based consumer protection mechanisms are valued by all groups, although only Law students understand these mechanisms as the implementation of the platform's legal obligations. 7. Social factors emerge as the most dominant influences on purchase decisions, followed sequentially by economic, technological, legal, political, and environmental factors. Five out of seven faculties position social factors among their top two considerations. This dominance is reflected in the pervasive presence of social effects across nearly all stages of the purchase decision process, the very high intensity of influence, the ability to transcend faculty boundaries, and the simultaneous operation of multiple mechanisms. PESTEL factors do not operate independently but interact with one another, with primary interaction patterns occurring between social and economic factors, social and technological factors, economic and technological factors, and legal and political factors.

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