

The influence of online shopping attributes on fashion consumers' satisfaction and loyalty: Evidence from Indonesian e-commerce

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ABSTRACT

This study examines how online shopping attributes shape satisfaction and loyalty among Indonesian fashion e-commerce users. Using a quantitative, descriptive–associative, cross-sectional design, we surveyed 170 consumers who had made at least one online purchase. The model specifies Information Quality, Privacy, Security, Delivery or fulfilment, and Product Variety as antecedents; Customer Satisfaction as a mediator; Price as a moderator; and Customer Loyalty as the outcome. Measurement diagnostics indicate acceptable reliability and validity ($CR > 0.87$; $AVE > 0.50$; $HTMT < 0.90$). Structurally, the attributes explain substantial variance in Satisfaction ($R^2 \approx 0.703$), while Satisfaction and Price account for moderate variance in Loyalty ($R^2 \approx 0.462$ without moderation; ≈ 0.485 with the interaction). Delivery or fulfilment ($\beta \approx 0.468$, $p < .001$) and Product Variety ($\beta \approx 0.403$, $p < .001$) significantly increase Satisfaction; Information Quality, Privacy, and Security do not. Satisfaction positively predicts Loyalty ($\beta \approx 0.314$, $p = .009$). Price exerts a strong direct effect on Loyalty ($\beta \approx 0.456$, $p < .001$) but does not significantly moderate the Satisfaction \rightarrow Loyalty path ($\beta \approx 0.021$, $p = .263$). The findings imply that logistics reliability and perceived assortment breadth are decisive levers for satisfaction in fashion e-commerce, while competitive, transparent pricing builds loyalty in parallel. Privacy and security appear to function as threshold “qualifiers”—necessary but not differentiating drivers of satisfaction in this mature platform context. Managerial priorities should emphasize SLA-backed delivery, assortment architecture, and durable value programs rather than expecting discounts to amplify the satisfaction–loyalty linkage.

Keywords: e-commerce; fashion; delivery; product variety; customer loyalty.

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1. INTRODUCTION

The rapid advancement of technology and information in the industry 4.0 era has accelerated markedly (Lasi et al., 2014; Xu et al., 2018). Such technological progress has simplified everyday life and reconfigured how firms create and deliver value (Teece, 2010). This phenomenon is inseparable from intense competition across several market sectors, notably the trade sector, which comprises business actors who are required to innovate technologically to remain competitive in global markets (Teece, 2010; Xu et al., 2018). Swift technological development has also shifted societal lifestyles, including shopping habits that span both online and offline channels. The widespread use of social media has further facilitated online purchasing by shaping information flows, social proof, and purchase intentions (Appel et al., 2020).

The emergence of trading platforms, commonly referred to as e-commerce, is one such development. In recent years—particularly during the pandemic—e-commerce growth has accelerated as many entrepreneurs have leveraged these platforms to offer products to potential buyers. This, in turn, has cultivated habitual online shopping. E-commerce simplifies the purchasing process via mobile devices: users need only ensure an internet data plan, select a preferred courier service for delivery, and complete payment for their orders (Ribadu & Rahman, 2019).

The growth of e-commerce in Indonesia is driven by a shift in consumer behavior away from conventional purchasing. Stimulating interest in online shopping has become integral to marketing across rapidly expanding social networks worldwide, propelled by rising internet adoption that fuels e-commerce business development. Online business has become a competitive advantage, supported by diverse product offerings and operational ease.

E-commerce platforms present their products and strive to attract large consumer bases to shop on their systems. High user adoption is closely linked to platform attributes intentionally designed to differentiate them from competitors. Platforms that provide comfort, safety, and enjoyable experiences can foster consumer trust and loyalty toward online shopping. When interacting with a vendor's website, online consumers navigate pages and seek relevant product information before forming purchase intentions or committing to a transaction.

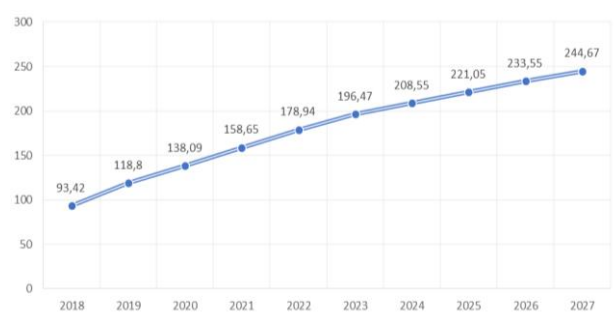


Figure 1. Indonesian E-Commerce Users, 2018–2027 (in millions)

Source: Statista, 2023

Based on Figure 1, the number of users in Indonesia's e-commerce market is projected to continue rising between 2023 and 2027 by 48.2 million users (+24.53%). After four consecutive years of growth, the user base is expected to reach 244.67 million, with the peak occurring in 2027. Notably, the number of e-commerce users has increased steadily in recent years.

A wide range of products is available in online commerce, one of which is fashion. Fashion products are the most sought-after and most frequently purchased by Generation Z and Millennials. This phenomenon is evidenced by a study from Kredivo and the Katadata Insight Center showing that fashion is the most commonly purchased product category online among Generation Z and Millennials (30%), followed by beauty products (16%). In this study, Generation Z respondents were aged 15–22 years and Millennials were aged 23–38 years. This aligns with findings from the Katadata Insight Center indicating that most fashion buyers are aged

18 and above. Furthermore, a survey conducted by Indikator Politik Indonesia of 733 respondents reported that fashion is the most frequently purchased product category in online shopping (65.7%).

Fashion products function as attributes individuals use to enhance their appearance in daily activities (Belk, 1988). In consumer behavior research, fashion merchandise typically encompasses clothing and personal accessories—items that communicate style and self-presentation in everyday life. In practice, commonly purchased fashion goods include apparel, bags, wallets, shoes, sandals, hats, and assorted accessories. The prominence of fashion products in daily consumption has expanded rapidly because fashion is tightly coupled to shifting trends and accelerated market cycles (Barnes & Lea-Greenwood, 2006).

Fashion trends in society are dynamic and continually change over time in line with broader developments. Current fashion trends are influenced by the rapid dissemination of information through mass media, which frequently serves as a source of the latest fashion trends (Rahayu, 2022). Mass media often features advertisements and content on up-to-date fashion styles in the form of photos and videos. This exposure enables individuals in early adulthood to find inspiration for their fashion choices, making them more enthusiastic about following contemporary standards.

By adopting trending fashion styles, individuals in early adulthood hope to gain social acceptance and present an attractive appearance. They may also seek to draw the attention of potential partners by dressing as well as possible. From a developmental perspective, early adulthood involves adapting to social group membership and beginning to search for or choose a life partner. Wearing trendy fashion items can also enhance self-confidence among young adults, which may encourage repeated purchases of fashion products beyond basic needs. Moreover, the various conveniences and appealing offers provided by online stores today further facilitate the fulfillment of their fashion preferences.

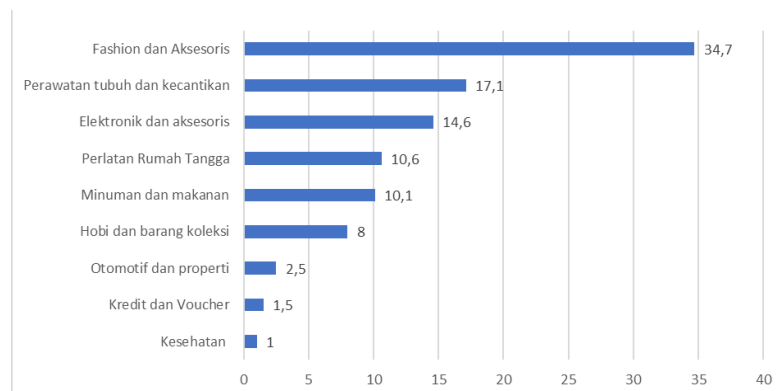


Figure 2. Categories of goods most frequently purchased on e-commerce in September 2022

Source: DataIndonesia.id

Based on Figure 2, the surge in Covid-19 cases in Indonesia initially spurred consumer interest in purchasing health-related products, including through online marketplaces (e-commerce). However, as the pandemic subsided, Indonesian consumers no longer prioritized health products. A survey by DataIndonesia.id shows that a majority—34.7% of respondents—now purchase fashion and accessories most frequently on e-commerce platforms, followed by body care and beauty products at 17.1%.

This shift has encouraged fashion producers to sell online. E-commerce websites and social media, accessible 24/7, offer fashion businesses the opportunity to reach consumers worldwide. Consumers benefit from round-the-clock convenience to buy what they want, when they want. Online business owners, in turn, avoid the high costs associated with store rentals, security measures, utility bills, and large staffing needs—ultimately enabling them to offer products at competitive prices.

Prior research on the Influence of Online Shopping Attributes by Thabang Mofokeng (2021) demonstrated that online buyer satisfaction is affected by information quality, privacy, transaction security, delivery, and product variety. The present study seeks to determine the extent to which e-commerce platforms leverage variety to attract fashion consumers' interest and satisfaction, and how these platforms deliver

enjoyment to sustain user loyalty. Specifically, this research examines the effects of consumers' experiences with e-commerce—namely information quality, privacy, security, delivery, product variety, and price—as antecedents; accordingly, the study is titled “The Influence of Online Shopping Attributes on Fashion Consumers' Satisfaction and Loyalty.”

This study differs from earlier work by focusing exclusively on one product category—fashion—and by assessing the influence of online shopping attributes on fashion consumers with the addition of price as a moderating variable. The findings are expected to serve as a reference for future researchers examining how online shopping attributes affect fashion consumer satisfaction, and to inform the broader public so they respond more prudently to online store promotions and adopt more selective behaviors in making online purchases.

2. METHOD

This study employs a descriptive–associative problem formulation. A descriptive formulation addresses questions concerning various variables, whereas an associative formulation depicts relationships between one social situation or domain and another (Sugiyono, 2017). The present research is structured to explain and portray a social phenomenon—namely, consumer behavior in making purchase decisions.

The unit of analysis is the individual—specifically, users of e-commerce who have shopped online at least once. Data collection from the sample is conducted once at a single point in time (cross-sectional). Based on the foregoing, the research method can be summarized in tabular form.

This study adopts a quantitative, descriptive–associative, cross-sectional design to explain a social phenomenon: how online shopping attributes relate to customer satisfaction and customer loyalty among e-commerce users. The unit of analysis is the individual consumer who has made at least one online purchase. Data are collected once at a single point in time using a structured questionnaire.

The independent variables are Information Quality (X1), Privacy (X2), Transaction Security (X3), Delivery Speed/Fulfillment (X4), and Product Variety (X5). Customer Satisfaction serves as the mediator (M / Y1), Price (X6) as the moderator, and Customer Loyalty (Y2) as the dependent variable. Constructs are operationalized from established literature: information quality (e.g., accuracy, relevance, timeliness) drawing on DeLone & McLean; privacy and security concerns from e-commerce privacy/security research; fulfillment from service logistics studies; and variety from online retail assortment work. Satisfaction is treated as a cumulative evaluation of the overall online purchase experience, and loyalty as the downstream outcome.

Items reflect the indicators presented (e.g., clarity and sufficiency of product information; transparency of privacy policy; perceived security of transactions; on-time delivery and packaging quality; assortment breadth; overall satisfaction). All items are rated on a Likert-type scale to enable parametric analysis. The instrument undergoes basic content checking and standard psychometric screening (descriptive statistics, reliability, and construct validity).

The empirical strategy first presents descriptive profiles, then tests the associative relationships among variables using appropriate statistical techniques (e.g., correlation and regression or structural modeling) to examine (i) direct effects of online shopping attributes on satisfaction and loyalty, (ii) the mediating role of satisfaction, and (iii) the moderating effect of price on the paths from attributes to satisfaction/loyalty.

3. RESULT AND DISCUSSION

3.1 Result

3.1.1 Sample Profile and Purchase Context

This study surveyed 170 Indonesian fashion e-commerce users who had made at least one online purchase. The sample skews female (76.47%) and is concentrated in the 21–40 age brackets ($\approx 83\%$), with

most respondents holding a bachelor's degree (67.65%). Purchase intensity is high: 41.18% report buying more than six times per month, and a further 28.23% purchase 4–6 times per month. Monthly income clusters between IDR 5–10 million (51.18%), indicating substantial discretionary spending power for discretionary categories such as fashion. Platform use is dominated by Shopee (74.12%), with Lazada and Tokopedia far behind (each 12.94%). This profile is consistent with the introduction's emphasis on fashion as a leading online category among young adults, and provides a realistic consumer base to test how online shopping attributes shape satisfaction and loyalty.

3.1.2 Descriptive Indicator Patterns

Mean scores (1–5 scale) indicate generally favorable perceptions across constructs. Information Quality (mean 4.06) and Delivery/Fulfillment (4.04) are both in the “agree” range; Security (4.03) and Privacy (3.95) are similar; Customer Satisfaction is highest (4.12), followed by Loyalty (3.98). Product Variety and Price each average 3.67, still positive but relatively lower than service attributes. Within constructs, respondents highlight “appealing” product information (KI5) but are less convinced about information “consistency” (KI4). In Privacy, the clearest item is the necessity of some personal data to complete transactions (PV2), while explicit clarity of privacy policy (PV3) lags. For Security, protection of payment data (KN2) is strongest, whereas detailed disclosure of security practices (KN3) is weaker. Product Variety shows the expected pattern: “most products I need can be found here” (VR4) is high, while the reverse-coded “range is unclear” (VR1) is low—evidence of perceived assortment clarity. Loyalty peaks at “I will continue using this e-commerce” (LO3), but “I prefer this site over others” (LO4) is comparatively weaker, hinting at multi-homing behavior across platforms. These descriptive results already suggest that logistics reliability and assortment breadth are intuitive levers for satisfaction in fashion e-commerce, anticipating the inferential findings below.

3.1.3 Measurement Model Quality

Reflective measurement quality is acceptable. Convergent validity criteria are met: most item loadings exceed the 0.60 rule-of-thumb, composite reliabilities (CR) are strong (all >0.87), and AVEs surpass the 0.50 threshold, supporting adequate communalities. Discriminant validity via HTMT indicates all interconstruct ratios below the 0.90 limit, supporting construct distinctiveness. Together, these diagnostics indicate that the latent variables—Information Quality, Privacy, Security, Delivery, Product Variety, Price, Satisfaction, and Loyalty—are measured reliably and capture unique variance in the data. This satisfies the method's requirement to establish outer-model adequacy before interpreting structural paths.

3.1.4 Structural Model Fit and Predictive Relevance

Three R^2 values are reported: (i) for Satisfaction as a function of Information Quality, Privacy, Security, Delivery, and Product Variety, $R^2 \approx 0.703$ (strong), indicating that the attribute set jointly explains about 70% of the variance in Satisfaction; (ii) for Loyalty as a function of Satisfaction (without moderation), $R^2 \approx 0.462$ (moderate); and (iii) for Loyalty including the Satisfaction \times Price interaction, $R^2 \approx 0.485$ (moderate). The cross-validated predictive relevance statistic (Q^2) equals ≈ 0.917 (>0), evidencing substantial out-of-sample predictive capability. These values align with a descriptive–associative, cross-sectional design that aims to quantify the relative contributions of web-store attributes to outcomes (Satisfaction and Loyalty) in a high-use, fashion-oriented cohort.

These results confirm the introduction's anticipations about the primacy of logistics performance and assortment breadth in fashion e-commerce, while tempering the intuitive role of information quality, privacy, and security in driving satisfaction—at least for this cohort and category. They also validate the method's conceptualization of Satisfaction as a mediator between store attributes and Loyalty, and test the proposed Price moderation on the Satisfaction \rightarrow Loyalty link (which does not materialize).

3.2 Discussion

3.2.1 Why Delivery Eclipses Other Service Attributes for Fashion

In fashion, “fit, feel, and form” uncertainty is high before the item is physically tried. When consumers compensate for that uncertainty by purchasing multiple sizes or variants—or by relying on swift exchanges—delivery speed, accuracy, and condition dominate the post-purchase evaluation. The significant Delivery→Satisfaction path ($\beta \approx 0.468$) indicates that timely, accurate, and well-packaged fulfillment is not merely a hygiene factor; it is the largest driver of satisfaction in this model. The descriptive means corroborate this: delivery indicators (on-time, correct item, proper packaging, acceptable mode) all sit firmly in the “agree” range, suggesting consumers notice and reward logistical competence.

For Indonesian consumers in dense urban regions (reflected by the income and purchase frequency patterns), last-mile reliability translates into reduced time costs, fewer returns, and less friction—benefits that loom larger than marginal gains in information presentation. Operationally, this implies that e-retailers serving fashion buyers should prioritize SLA adherence, multi-carrier routing, real-time tracking, proactive delay notifications, and easy exchange workflows as core value propositions. This dovetails with the managerial guidance to expand courier partnerships and provide delivery status messaging to sustain satisfaction advantages.

3.2.2 Variety as Perceived Choice and The Psychology of Fit

The significant Product Variety→Satisfaction path ($\beta \approx 0.403$) underscores perceived choice as a mechanism for satisfaction. In fashion, assortment breadth—colors, sizes, styles, brands—raises the probability that shoppers will find a close match to personal preferences (style identity, body measurements, occasion). The descriptive profile shows respondents agree that “most products I need can be found here,” and that the range is clear, pointing to assortment clarity as important as sheer breadth. Practically, retailers should optimize assortment architecture (taxonomy, filters, size/fit guidance, back-in-stock alerts) so that perceived variety is accessible, not overwhelming. The literature has long argued that perceived variety, rather than actual SKU count, drives choice satisfaction; the present findings align with that notion in a contemporary Indonesian fashion context.

3.2.3 The Surprising Weakness of Information Quality, Privacy, and Security

At first glance, the non-significant paths from Information Quality, Privacy, and Security to Satisfaction look counterintuitive. Three explanations fit the data and context:

First, threshold effects (hygiene factors). Major Indonesian platforms have converged on a baseline of information, privacy, and security practices. When all dominant players meet a “good enough” threshold—clear product pages, encrypted payments, established privacy notices—marginal improvements do not differentiate satisfaction. Descriptively, respondents rated payment protection highly but were less aware of detailed security disclosures and explicit privacy policy text; this suggests low salience rather than the absence of safety.

Second, category-specific salience. In fashion, tangible outcomes (Did I receive the right size quickly? Can I exchange easily?) overshadow upstream cognitive assurances. Consumers might read reviews and glance at photos, but the post-purchase logistics dominate emotional evaluation. This aligns with the sizable Delivery coefficient, outpacing the information variable.

Third, risk normalization. Heavy users (69% purchase ≥ 4 times per month) may have habituated to the privacy/security environment and offloaded that concern to the platform brand. In such cases, privacy/security contribute to loyalty indirectly via trust formation, but not directly to satisfaction with a particular transaction, which is how the construct is operationalized here. If so, future models might re-specify privacy/security as antecedents of trust, with trust then influencing satisfaction and loyalty.

Importantly, the non-significance does not mean privacy/security can be neglected. Rather, they function as table stakes whose failures are punitive, but whose incremental improvements, once above threshold, do not further lift satisfaction in this setting.

3.2.4 Satisfaction Reliably Predicts Loyalty, but Price Works in Parallel not As a Moderator

The Satisfaction→Loyalty path is positive and significant ($\beta \approx 0.314$), corroborating the well-established satisfaction–loyalty link while reminding practitioners that satisfaction alone is not overwhelmingly determinative—its effect size is meaningful but not dominant. Meanwhile, Price exerts a direct positive effect on Loyalty ($\beta \approx 0.456$), yet the hypothesized Price \times Satisfaction moderation on Loyalty is insignificant. There are several implications:

First, dual channels to loyalty. Consumers can become loyal because they are satisfied with delivery and variety and because the platform is price-competitive (via price level, perceived fairness, or promotion design). The two channels run in parallel; price competitiveness does not meaningfully strengthen or weaken the way satisfaction translates into loyalty, at least in this cross-section.

Second, price expectations are compartmentalized. Fashion buyers may treat price as a separate evaluative dimension (value-for-money, deal attractiveness) that anchors their platform stickiness independent of how satisfied they felt in a given transaction. Hence, “always good prices” can sustain repeat patronage even when the last delivery wasn’t perfect; conversely, “always fast delivery” can keep users loyal even when the current discount is modest.

Third, promotional design matters. If price is a robust direct lever, marketers should emphasize transparent pricing, credible reference prices, and smart promotions (bundles, tiered vouchers, loyalty credits) that build a stable value narrative rather than transient gimmicks. That will nurture loyalty without needing interaction with satisfaction to carry the effect.

3.2.5 Model Performance and Predictive Strength

With $R^2_{\text{Satisfaction}} \approx 0.703$ (strong) and $R^2_{\text{Loyalty}} \approx 0.462\text{--}0.485$ (moderate), the model fits the data well for a behavioral field survey. The $Q^2 \approx 0.917$ is unusually high, indicating strong predictive relevance; while Q^2 aggregates across endogenous constructs, its magnitude supports the usefulness of the attribute set—especially delivery and variety—for anticipating satisfaction and loyalty outcomes among Indonesian fashion e-commerce users. From a methodological standpoint, these values justify the quantitative, associative approach described in the methods: the constructs are empirically separable, reliable, and jointly predictive in ways that align with the theoretical frame built in the introduction.

4. CONCLUSION

The Indonesian fashion e-commerce market is large and still expanding, but loyalty is not automatic—it is earned through operational excellence and credible value, not merely glossy product pages. Empirically, two inputs matter most for building customer satisfaction: Delivery/Fulfillment and Product Variety. Faster, on-time, damage-free delivery and low-friction exchanges decisively improve post-purchase evaluations. In a category where fit and style uncertainty is high, a clear, navigable assortment (sizes, colors, cuts, brands) raises the probability of “right-first-time” purchases and, by extension, satisfaction. By contrast, Information Quality, Privacy, and Security do not significantly lift satisfaction once baseline expectations are met—indicating these are now table-stake qualifiers rather than differentiators.

Customer Satisfaction translates into Customer Loyalty, but not overwhelmingly; its effect is meaningful, not monopolistic. In parallel, Price has a sizeable direct effect on loyalty, yet it does not strengthen (or weaken) the satisfaction→loyalty transmission. Practically, this means two independent rails drive repeat patronage: (1) being consistently great at logistics and assortment, and (2) being consistently competitive and transparent on price. Deep discounts will not magically make satisfied users *more* loyal

than they already would be; instead, price should be used to craft a stable value narrative—fairness, predictability, and credible savings—while operational levers do the heavy lifting on satisfaction.

For managers, the playbook is straightforward and non-negotiable: invest in last-mile reliability (multi-carrier routing, real-time tracking, proactive delay alerts), make returns and exchanges painless, and surface size/fit guidance and filters that turn breadth into perceived variety rather than choice overload. On pricing, privilege clarity over gimmicks—use trustworthy reference prices, loyalty credits, and cross-cart discounts that reward continuity instead of one-off spikes. Maintain privacy and security as visible, comprehensible hygiene factors; a single failure is punitive even if incremental improvements do not boost satisfaction.

Methodologically, the measurement model is sound and the structural model explains substantial variance in Satisfaction ($\approx 70\%$) and moderate variance in Loyalty ($\approx 46\text{--}49\%$), consistent with a cross-sectional behavioral survey. Still, the cross-section limits causal claims, and the fashion focus constrains generalization to categories where information precision (e.g., electronics specs) may matter more. Future work should track cohorts longitudinally, explicitly model trust as an outcome of privacy/security, and incorporate returns experience and price fairness to capture additional variance in loyalty.

Ethical Approval

Not Applicable

Informed Consent Statement

Not Applicable

Disclosure Statement

The Authors declare that they have no conflict of interest

Data Availability Statement

The data presented in this study are available upon request from the corresponding author for privacy.

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Notes on Contributors

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Ferdy Syafrial is affiliated with Universitas Bina Nusantara.

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