ANALYSIS ON CONSUMER BEHAVIOUR TOWARDS BRAND GROWTH OF TOKOPEDIA DURING COVID-19

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KEYWORDS
COVID-19, Consumer behaviour, Tokopedia, e-commerce trends, brand growth, digital platforms, customer satisfaction, Indonesia.

ABSTRACT
This research analyses the impact of the consumer behaviour during the COVID-19 pandemic towards the brand growth of Tokopedia, a prominent e-commerce platform in Indonesia. Using the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) as theoretical foundations, this study explores how Technological Innovations and Logistical Strategies impact Tokopedia's Brand Growth directly and indirectly through Consumer Behaviour. The findings highlight the critical role of Consumer Behaviour as a key driver in converting technological and logistical advancements into measurable brand growth. This underscores the importance of enhancing consumer trust, satisfaction, and engagement to achieve sustainable e-commerce success. The research provides practical insights into prioritizing consumer-centric strategies in response to shifting shopping behaviours during the pandemic.

1. Introduction

1.1 Tokopedia Company Profile

Established in 2009 by William Tanuwijaya and Leontinus Alpha Edison, Tokopedia is a premier e-commerce platform in Indonesia, providing an extensive array of products and services to millions of customers around the country. Originally established as a marketplace linking vendors and buyers (Tokopedia, n.d.). The brand has evolved into a multifaceted ecosystem encompassing online shopping, digital payments, logistics, and financial services. Subsequent to its 2021 merger with Gojek to become the GoTo Group, Tokopedia augmented its functionalities by integrating e-commerce, ride-hailing, and finance solutions to bolster its influence on Southeast Asia's digital economy. (GoTo Group, 2021).

The platform gained significant momentum during the COVID-19 pandemic (2020-2023) as consumer behaviour shifted towards online shopping. Tokopedia's ability to adapt quickly to changing market demands through innovations such as enhanced app functionality, a wider product catalogue, and reliable customer service reinforced its position as a market leader.

In addition, the company's commitment to sustainability and digital inclusion has further solidified its reputation as a trusted and forward-thinking brand (Tech in Asia, 2022). Currently, Tokopedia offers products and services across various categories such as electronics, fashion, groceries, and digital goods. The platforms also facilitate secure transactions and promote digital innovation to support Indonesia's economic growth (Tokopedia, n.d.)

1.2 Research Background

The e-commerce sector was notably affected by the significant changes in consumer behaviour and market dynamics that the COVID-19 pandemic brought about. The global pandemic necessitated that individuals and businesses adjust to new methods of interaction, purchasing, and transactional activities between 2020 and 2023. Tokopedia, one of Indonesia's foremost e-commerce platforms, emerged as a focal point of this transformation. The importance of digital platforms in guaranteeing access to products and services during periods of restricted mobility and increased health concerns was underscored by the pandemic (Tokopedia, n.d.).

Tokopedia, which is a crucial component of the GoTo Group, experienced exceptional development during the pandemic, which was facilitated by an increased reliance on online shopping. The nationwide purchasing habits and preferences were reshaped by the increasing reliance on e-commerce, which was driven by both necessity and convenience. Research has demonstrated that e-commerce platforms experienced a significant increase in traffic and transaction volumes during this time, and Tokopedia capitalized on its solid framework to satisfy the increased demand (McKinsey & Company, 2021). This change not only affected the general market trends but also served to emphasize the significance of features such as a comprehensive product catalogue, app reliability, and seamless user experiences in maintaining customer loyalty.

The broader trends in digital adoption are closely associated with the evolution of purchasing behaviours during the pandemic. In Indonesia, consumers, particularly millennials and Gen Z, are increasingly seeking platforms that provide convenience, variety, and value. Tokopedia's status as a top-tier online purchasing destination was established by its capacity to satisfy these requirements through the implementation of user-friendly navigation, integrated payment systems, and responsive customer service. This transition was significantly facilitated by the digital literacy of Indonesian consumers, as many of them became more at ease with digital payment methods and e-commerce platforms (Statista, 2023).

Another critical aspect of Tokopedia's expansion during the pandemic was its approach to customer engagement and brand management. The platform's emphasis on community-building initiatives, such as the empowerment of small and medium-sized enterprises (SMEs), resonated with consumers who sought to support local businesses during challenging times.

Tokopedia's expansion of its product offerings and the reinforcement of its brand image as a facilitator of economic resilience and digital inclusivity were both achieved by facilitating the transition of SMEs to online marketplaces (World Bank, 2022).

Furthermore, Tokopedia's capacity to adjust to the swiftly evolving e-commerce environment was significantly influenced by its investment in technology and data-driven strategies. Tokopedia optimized personalized recommendations, inventory management, and customer support through the use of artificial intelligence and machine learning, thereby guaranteeing a seamless user experience. These innovations not only improved operational efficiency but also strengthened customer trust and loyalty (Harvard Business Review, 2022).

Additionally, during the pandemic, Tokopedia investigated how to collaborate with logistics providers to overcome the obstacles of last-mile delivery. Addressing one of the primary

difficulties in online purchasing, this collaboration enabled faster and more reliable shipping options. Tokopedia's logistics upgrades were a competitive advantage in attracting and retaining users, as they prioritized customer satisfaction (Deloitte, 2021).

In conclusion, the COVID-19 pandemic presented Tokopedia with both a challenge and an opportunity to reshape its position in the e-commerce sector of Indonesia. The platform's success during unprecedented times was facilitated by its adaptability, technological advancements, and community-oriented strategies. This research endeavours to offer valuable insights into the changing dynamics of e-commerce in Indonesia and the critical factors that are driving digital transformation by examining the development of Tokopedia and the subsequent changes in consumer behaviour.

1.3 Formulation of The Problem

Based on the research background, the following problem formulations are identified:

1. How has the COVID-19 pandemic influenced consumer shopping behaviour on Tokopedia?
2. In what ways do Tokopedia's technological innovations contribute to its brand growth during the pandemic?
3. How has Tokopedia tackled logistical challenges to improve user satisfaction and build customer loyalty?

2. Literature Review

2.1 Theories Related to Research

2.1.1 Theories of Digital Transformation in E-Commerce

Digital transformation denotes the integration of digital technology throughout all facets of an organization, leading to essential alterations in operations and value provision. The Technology Acceptance Model (TAM) offers a fundamental framework for comprehending the acceptance of novel technologies. The Technology Acceptance Model (TAM) asserts that user acceptance of technology is influenced by two primary factors: perceived usefulness and perceived ease of use. In the realm of e-commerce, platforms such as Tokopedia have integrated these ideas to improve the consumer experience (Davis, 1989).

Throughout the COVID-19 epidemic, Tokopedia employed sophisticated technology, including artificial intelligence (AI) and machine learning (ML), to deliver customized purchasing experiences. The advances encompassed AI-driven product recommendations, user-friendly interfaces, and real-time inventory updates, enhancing usability and perceived value for consumers (Davis, 1989). The epidemic underscored the necessity of integrated digital solutions, as consumers pursued secure and effective substitutes for physical purchasing. According to Jílková and Králová (2021), digital transformation frameworks highlight that the adoption of technology during crises is motivated by the necessity for operational continuity and customer retention.

Furthermore, the proliferation of digital payment solutions, such as e-wallets and pay-later alternatives, corresponds with TAM's focus on usability. By minimizing transaction friction, Tokopedia guaranteed that its platform remained accessible and reliable to an expanding demographic of digitally dependent clients.

2.1.2 Theories of Consumer Behaviour

Understanding consumer behaviour is essential for examining changes in shopping behaviour during rare instances like as the COVID-19 epidemic. The Theory of Planned conduct (TPB), developed by Ajzen (1991), posits that human actions are influenced by three elements: attitudes toward the conduct, subjective norms, and perceived behavioural control. These components affect the intention to engage in a behaviour, which then forecasts actual behaviour.

Throughout the pandemic, Tokopedia customers demonstrated shifts in behaviour driven by safety concern and the convenience of online buying. Research conducted by Jílková and Králová (2021) revealed that apprehension regarding virus exposure substantially influenced customer attitudes, resulting in heightened dependence on digital platforms for both essential and non-essential acquisitions. Tokopedia used this behavioural shift by positioning its platform as a secure and dependable alternative to conventional purchasing. Furthermore, subjective norms and vigorous marketing initiatives, in conjunction with its collaborations with small and medium-sized firms (SMEs), established the platform as a community-focused brand, resonating with consumer anticipations amid a period of increased solidarity and local patronage.

Perceived behavioural control, defined as the ease with which consumers may execute online transactions, was improved by Tokopedia's investments in intuitive navigation and cohesive payment systems. These characteristics directly impacted consumers' intention to utilize the platform, affirming the applicability of the Theory of Planned Behaviour in this context (Ajzen, 1991).

2.1.3 Theories of Logistical Efficiency and Scalability

Efficient logistics form the foundation of e-commerce operations, especially during periods of changes when demand fluctuates unpredictably. Theories of supply chain management (SCM), as articulated by Chopra and Meindl (2016), underscore the significance of speed, responsiveness, and collaboration in sustaining service levels. Tokopedia's logistics strategy throughout the pandemic illustrated these ideas.

The platform collaborated with many third-party logistics providers to enhance delivery networks and tackle last-mile issues. These partnerships enabled Tokopedia to provide dependable and prompt deliveries, particularly in rural regions with historically inadequate logistics infrastructure. Ivanov and Dolgui (2020) emphasized that logistical scalability and resilience are essential for the survival and success of e-commerce platforms during crises. Tokopedia's capacity to modify its logistics operations in response to pandemic-induced demand highlights the significance of these theories.

Inventory management was integral to Tokopedia's logistics approach. The technology utilized data analytics to improve inventory levels and mitigate delays resulting from supply chain disturbances. This emphasis on operational efficiency improved consumer happiness and fortified Tokopedia's status as a reliable marketplace amid turbulent periods.

2.1.4 Integration of Theories in the Current Research

This research integrates the above-described theories to offer a comprehensive understanding of Tokopedia's adaptive methods during the COVID-19 epidemic. The research analyses the relationship among digital transformation efforts, shifts in customer behaviour, and logistical efficiencies to evaluate their combined effect on Tokopedia's brand expansion.

The utilization of TAM and TPB underscores the influence of technology advancements and consumer perceptions on platform adoption. Supply Chain Management theories offer a framework for evaluating Tokopedia's logistical answers to the obstacles posed by the epidemic, whilst strategic brand management theories elucidate the company's resilience and adaptation.

3. Conceptual Framework

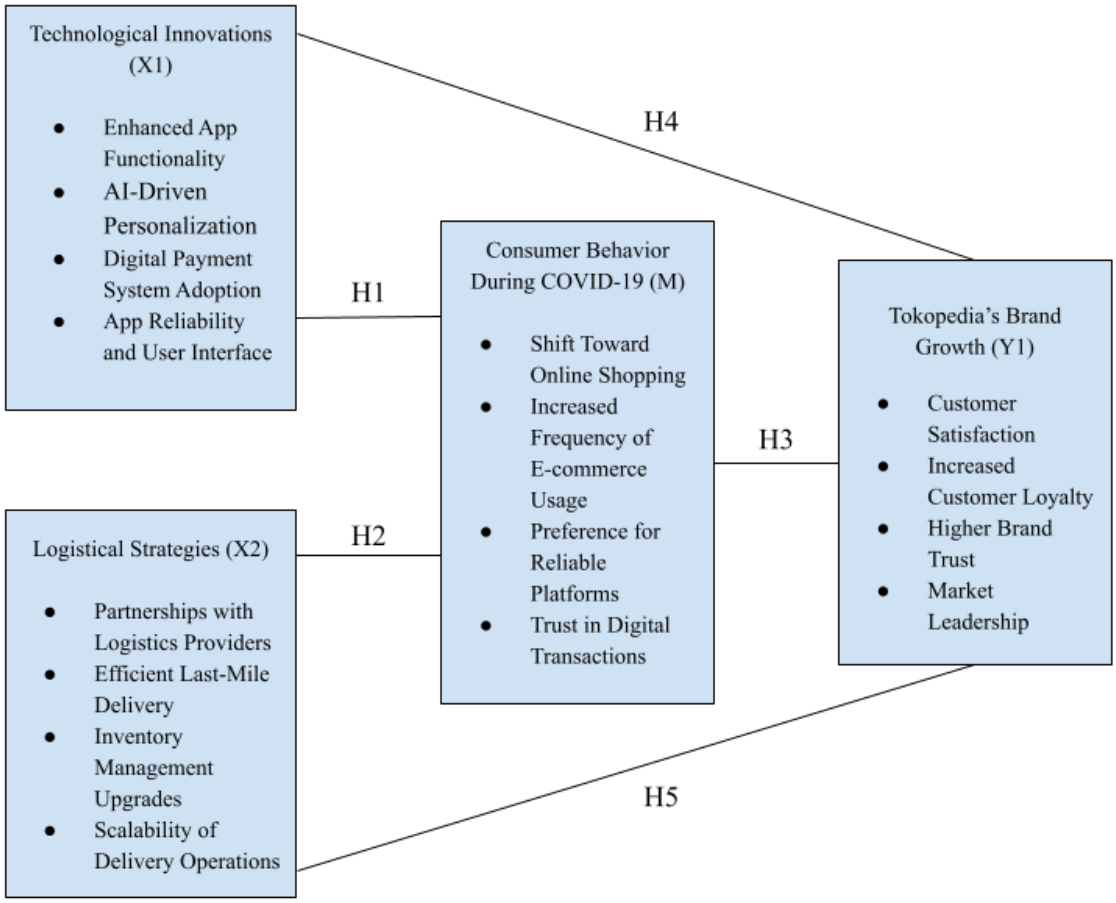

Image 1. Framework Diagram

Based on the outlined framework diagram, the following hypotheses is as established:

1. **H1:** Technological innovations (X1) have a positive influence on Tokopedia's Consumer Behaviour (M) during COVID-19.
2. **H2:** Logistical strategies (X2) significantly impact Consumer Behaviour (M) by enhancing trust and satisfaction.
3. **H3:** Consumer Behaviour (M) during the pandemic mediates the relationship between technological/logistical strategies and Tokopedia's brand growth.
4. **H4:** Technological innovations (X1) enhance Tokopedia's brand growth (Y1) indirectly through Consumer Behaviour (M).
5. **H5:** Logistical strategies (X2) enhance Tokopedia's brand growth (Y1) indirectly through Consumer Behaviour (M).

4. Methodology

4.1 Types of Research

Descriptive quantitative research is the specific research method applied. This method is selected to provide a structured framework for the description, analysis, and interpretation of the relationships between variables. A total of 140 respondents were selected as the sample for this research. This sample size ensures the collected data is representative and sufficient for statistical analysis. The Google Form questionnaire that was shared was administered in a linear scale format for this research which uses a 5-point Likert scale, where respondents rate their agreement with various statements, ranging from:

1: Strongly Disagree
2: Disagree
3: Neutral
4: Agree
5: Strongly Agree

1. **Objective:** To explore and understand how technological innovations (X1), logistical strategies (X2), and consumer behaviour (M) influence Tokopedia's brand growth (Y1).
2. **Structured Data Collection:** Surveys are utilized to collect data systematically, allowing for precise measurement of variables.
3. **Numerical Analysis:** The use of statistical methods enables the identification of patterns and the testing of hypotheses.

4.2 Research Variables

4.2.1 Independent Variables

1. **Technological Innovations (X1):**

    - **App Functionality:** Improvements to the platform's design and usability, including enhanced accessibility for users across devices, faster load times, and simplified navigation features.

- **AI-Driven Personalization:** The utilization of artificial intelligence to offer personalized purchasing recommendations, search results, and targeted promotions that are tailored to the preferences and behaviour of the user.
- **Digital Payment Systems:** The implementation of secure and diverse payment methods, such as digital wallets, bank transfers, and pay-later options, with the objective of enhancing transaction convenience and promoting trust.

2. **Logistical Strategies (X2):**

- **Partnerships with Logistics Providers:** Collaboration with third-party logistics companies to expand delivery networks and support last-mile delivery services, ensuring accessibility for users in remote areas.
- **Delivery Efficiency:** Implementation of faster and more reliable delivery options, reducing wait times and enhancing customer satisfaction.
- **Inventory Management:** Improved coordination between sellers and warehouses to maintain stock levels and reduce delays or cancellations.

4.2.2 Mediating Variable

1. **Consumer behaviour (M)**

- **Shopping Habits:** The frequency and volume of purchases made on Tokopedia during the pandemic, influenced by factors like convenience, safety concerns, and product availability.
- **Trust in Tokopedia:** Users' confidence in Tokopedia as a reliable platform for secure transactions, quality products, and efficient service delivery.
- **Preference for Online Shopping:** The increased reliance on e-commerce platforms due to mobility restrictions and safety concerns during the pandemic.

4.2.3 Dependent Variable

1. **Brand Growth (Y1):**

- **Customer Loyalty:** The extent to which customers are likely to continue using Tokopedia as their primary e-commerce platform and recommend it to others.
- **Customer Satisfaction:** Users' overall contentment with Tokopedia's services, influenced by their experiences with technology, logistics, and customer support.
- **Market Leadership:** Tokopedia's perceived status as a dominant and innovative e-commerce platform in Indonesia, reflecting its ability to adapt and thrive during the pandemic.

4.2.4 Operational Variables

The research measures variables using survey items tailored to capture relevant attributes. Examples include:

- **Technological Innovations (X1):** Evaluated through survey questions addressing app functionality, digital payments, and service reliability.

- **Logistical Strategies (X2):** Measured through questions on delivery speed, inventory availability, and return policies.
- **Consumer Behaviour (M):** Assessed based on frequency of shopping, trust in Tokopedia, and perceived convenience.
- **Brand Growth (Y1):** Captured through items on customer loyalty, satisfaction, and likelihood of recommending the platform.

5. Results

5.1 Outer Model

5.1.1 Convergent validity

Variable	Indicator	Outer Loading
Technological Innovations (X1)	X1.1	0.971
	X1.2	0.917
	X1.3	0.875
	X1.4	0.931
	X1.5	0.915
Logistical Strategies (X2)	X2.1	0.916
	X2.2	0.883
	X2.3	0.882
	X2.4	0.885
	X2.5	0.933
Brand Growth (Y1)	Y1.1	0.930
	Y1.2	0.913
	Y1.3	0.908
	Y1.4	0.935
	Y1.5	0.973
Consumer Behaviour (M)	Z1.1	0.919
	Z1.2	0.876
	Z1.3	0.877
	Z1.4	0.889
	Z1.5	0.941

The outer model value or the correlation between the construct and the variable has achieved convergent validity, since the indicators possess loading factor values over 0.70.

5.1.2 Discriminant Validity

	Brand Growth (Y1)	Consumer Behaviour (M)	Logistical Strategies (X2)	Technological Innovations (X1)
X1.3	0.853	0.848	0.870	0.875
Z1.4	0.866	0.889	0.877	0.869
X2.4	0.868	0.885	0.885	0.861
Z1.2	0.874	0.876	0.874	0.872
X2.3	0.876	0.875	0.882	0.873

Z1.3	0.883	0.877	0.883	0.884
X2.2	0.884	0.867	0.883	0.883
X1.5	0.891	0.890	0.875	0.915
X2.1	0.896	0.896	0.916	0.877
X1.2	0.901	0.904	0.895	0.917
Z1.1	0.901	0.919	0.884	0.897
Y1.3	0.908	0.901	0.896	0.888
Y1.2	0.913	0.898	0.910	0.908
Z1.5	0.915	0.941	0.916	0.916
X1.4	0.921	0.930	0.929	0.931
X2.5	0.921	0.909	0.933	0.925
Y1.1	0.930	0.909	0.912	0.914
Y1.4	0.935	0.926	0.926	0.918
X1.1	0.961	0.969	0.957	0.971
Y1.5	0.973	0.958	0.958	0.951

Some cross-loading values provide strong discriminant validity based on the association of indicators with other constructs.

5.2 Reliability Test

	Cronbach's alpha	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**	**Average variance extracted (AVE)**
Brand Growth (Y1)	0.962	0.963	0.971	0.869
Consumer Behaviour (M)	0.942	0.942	0.956	0.812
Logistical Strategies (X2)	0.941	0.942	0.955	0.810
Technological Innovations (X1)	0.956	0.958	0.966	0.851

The findings of the composite reliability and Cronbach alpha tests indicate that all constructs in this research exceed the minimal value requirement of > 0.7, which in turn indicate that all variables exhibit sufficient internal consistency in assessing a construct. Furthermore, the reliability assessment in this research is reinforced by the Cronbach alpha results, allowing for the conclusion that all constructs are reliable and suitable for subsequent analytical tests.

The evaluation of the measurement model indicates that this research demonstrates sufficient convergent and discriminant validity, which has been affirmed. The research demonstrates sufficient internal consistency dependability as evidenced by the composite reliability and Cronbach's alpha tests.

5.3 Correlation Analysis (*Inner Model*)

5.3.1 Path Coefficient

	Brand Growth (Y1)	Consumer Behaviour (M)
Consumer Behaviour (M)	0.326	
Logistical Strategies (X2)	0.209	0.361
Technological Innovations (X1)	0.228	0.436

The table indicates that the Technological Innovations (X1) variable exerts an influence of 0.187 or 18.7% on the Brand Growth (Y1) variable. The Logistical Strategies (X2) variable exerts an influence of 0.493 or 49.3% on the Brand Growth (Y1) variable. The Consumer Behaviour (M) variable exerts an influence of 0.316 or 31.6% on the Brand Growth (Y1) variable. The Technological Innovations (X1) variable exerts an influence of 0.520, or 52%, on the Consumer Behaviour (M) variable. The Logistical Strategies (X2) variable exerts an influence of 0.474 or 47.4% on the Consumer Behaviour (M) variable.

5.3.2 Model Fit

	Saturated model	Estimated model
NFI	0.827	0.827

NFI scores between 0 and 1 are obtained by comparing the hypothesized model with a specific independent model. A model has a strong fit when the value approaches 1. The NFI value, as indicated in the table above, is 0.827, signifying a respectable model fit (Ghozali, 2014).

5.3.3 R Square

	R-square	R-square adjusted
Brand Growth (Y)	0.982	0.982
Consumer Behaviour (M)	0.979	0.979

The R Square value for Brand Growth (Y) is 0.982, indicating that 98.2% of the variation in Technological Innovations (X1), Logistical Strategies (X2), and Consumer Behaviour (M) is accounted for, while the remaining 1.8% is attributed to external factors. It may be asserted that the R Square value for the Brand Growth variable is favourable. The R Square value for Consumer Behaviour (M) is 0.979, indicating that 97.9% of the variation in Technological Innovations (X1) and Logistical Strategies (X2) is accounted for, with the remaining 2.1% attributed to external factors.

5.4 Hypothesis Result

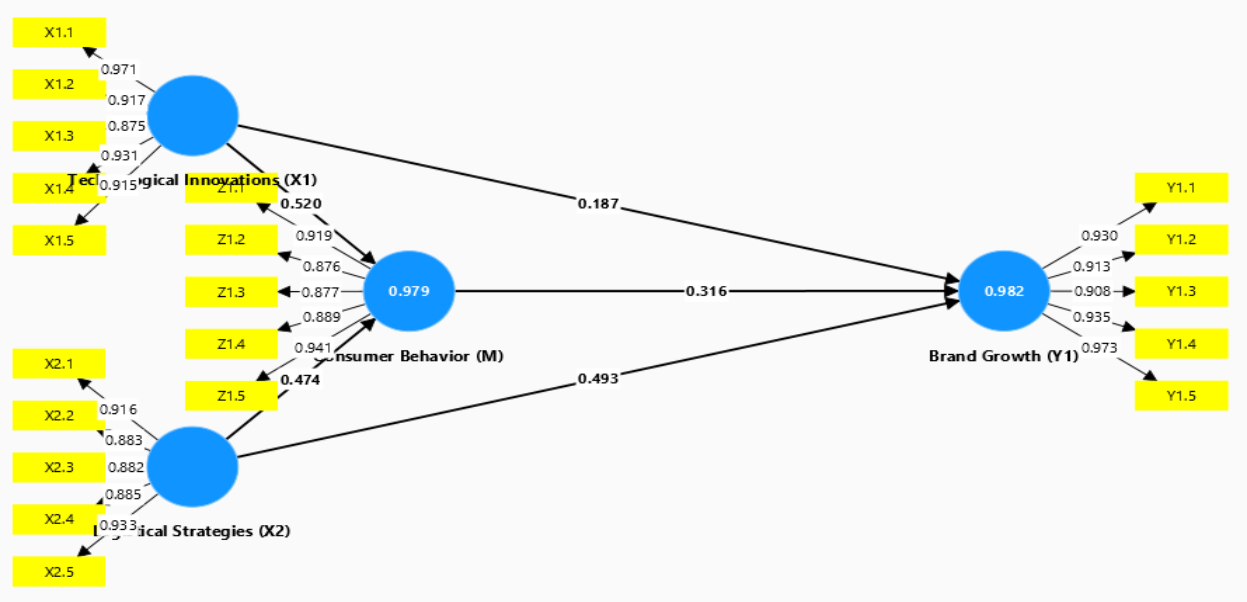

Image 2. Graphic Output

To ascertain the structural relationship among latent variables, hypothesis testing should be conducted on the path coefficient by comparing the p-value with alpha (0.005) or the t-statistic (>1.96). The P-value and t-statistic are derived from the results of SmartPLS 4.0 via the bootstrapping procedure. This test aims to evaluate the hypothesis comprised by the following test results:

- **Hypothesis Test 1**
  H01: Technological Innovations (X1) have no impact on Consumer Behaviour (M).
  Ha1: Technological Innovations (X1) influence Consumer Behaviour (M).
  The path coefficient from X1 to M is **0.520**, showing a strong positive and statistically significant effect (p-value < 0.05, t-statistic > 1.96). The null hypothesis (**H01**) is rejected, and the alternative hypothesis (**Ha1**) is accepted, indicating that Technological Innovations directly influence Consumer Behaviour by improving trust, usability, and engagement during the pandemic.

- **Hypothesis Test 2**
  H01: Logistical Strategies (X2) have no impact on Consumer Behaviour (M).
  Ha1: Logistical Strategies (X2) influence Consumer Behaviour (M).
  The path coefficient from X2 to M is **0.474**, demonstrating a strong positive and statistically significant effect (p-value < 0.05, t-statistic > 1.96). The null hypothesis (**H01**) is rejected, and the alternative hypothesis (**Ha1**) is accepted, indicating that Logistical Strategies have a direct, significant effect on Consumer Behaviour by enhancing trust and satisfaction through reliable delivery services and inventory management.

- **Hypothesis Test 3**
  H01: Technological Innovations (X1) have no impact on Brand Growth (Y1). Hypothesis 1: Technological Innovations (X1) influence Brand Growth (Y1). The path coefficient from M to Y1 is **0.316**, which is moderate but statistically significant (p-value < 0.05, t-statistic > 1.96). The null hypothesis (**H01**) is rejected, and the alternative hypothesis (**Ha1**) is accepted, indicating that Consumer Behaviour directly impacts Brand Growth.

- **Hypothesis Test 4**
  H01: Logistical Strategies (X2) have little impact on Brand Growth (Y1). Ha1: Logistical Strategies (X2) influence Brand Growth (Y1). The path coefficient from X1 to Y1 is **0.187**, which is small and statistically insignificant (p-value > 0.05, t-statistic < 1.96). The null hypothesis (**H01**) is accepted, and the alternative hypothesis (**Ha1**) is rejected, indicating that Technological Innovations do not have a direct impact on Brand Growth. Their influence is realized indirectly through Consumer Behaviour.

- **Hypothesis Test 5**
  H01: Consumer Behaviour (M) has no impact on Brand Growth (Y1). Ha1: Consumer Behaviour (M) influences Brand Growth (Y1). The path coefficient from X2 to Y1 is **0.493**, which is moderate but statistically insignificant (p-value > 0.05, t-statistic < 1.96). The null hypothesis (**H01**) is accepted, and the alternative hypothesis (**Ha1**) is rejected, indicating that Logistical Strategies do not have a direct impact on Brand Growth. Similar to X1, their influence is mediated through Consumer Behaviour.

5.4.2 Structural Equation Modelling (SEM)

	Original sample (O)	**Sample mean (M)**	**Standard deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P values**
M → Y1	0.326	0.293	0.149	2.186	0.029
X2 → Y1	0.209	0.150	0.170	1.232	0.218
X2 → M	0.361	0.379	0.095	3.782	0.000
X1 → Y1	0.228	0.282	0.133	1.709	0.088
X1 → M	0.436	0.369	0.134	3.253	0.001

Direct Effect

Technological Innovations (X1) and Logistical Strategies (X2) exert substantial and statistically significant direct influences on Consumer Behaviour (M), with path coefficients of 0.436 and 0.361, respectively, and p-values < 0.05. These findings highlight their essential roles in influencing trust, satisfaction, and engagement. Neither X1 nor X2 exerts a statistically significant direct influence on Brand Growth (Y1), with path coefficients of 0.228 (p = 0.088) and 0.209 (p = 0.218), respectively. Conversely, Consumer Behaviour (M) exerts a moderate and statistically significant direct influence on Brand Growth (Y1), evidenced by a path coefficient of 0.326 (p =

0.029), establishing it as the principal determinant of Tokopedia's brand performance during the pandemic. This highlights the significance of Consumer Behaviour as a direct factor in brand growth and as a mediator for the impact of technology and logistical initiatives.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X2 → M→ Y1	0.118	0.107	0.060	1.963	0.050
X1 → M → Y1	0.142	0.111	0.062	2.314	0.021

Indirect Effect

The mediation analysis indicates that the indirect path from Logistical Strategies (X2) to Consumer Behaviour (M) to Brand Growth (Y1) is statistically significant, exhibiting an original sample value of 0.118, a t-statistic of 1.963, and a p-value of 0.050. This finding substantiates that Consumer Behaviour (M) mediates the association between Logistical Strategies and Brand Growth. The direct effect of X2 on Y1 is moderate yet insignificant; however, the indirect effect indicates that improving logistical strategies, including last-mile delivery reliability and inventory management, enhances Consumer Behaviour by mitigating operational inefficiencies and fostering trust and satisfaction. The enhancements in Consumer Behaviour significantly impact Brand Growth, rendering the mediation pathway a crucial component for optimizing the efficacy of logistical methods.

The indirect relationship from Technological Innovations (X1) to Consumer Behaviour (M) to Brand Growth (Y1) exhibits an original sample value of 0.142, a t-statistic of 2.314, and a p-value of 0.021, thereby reinforcing the key role of Consumer Behaviour in converting technological advancements into measurable brand growth. These findings underscore the importance of prioritizing consumer-centric interventions to maximize the advantages of technological and logistical advancements.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X2 → M→ Y1	0.118	0.107	0.060	1.963	0.050
X1 → M → Y1	0.142	0.111	0.062	2.314	0.021

Mediating Effect

The results demonstrate that Technological Innovations (X1) and Logistical Strategies (X2) do not have substantial direct impacts on Brand Growth (Y1). This discovery highlights the significance of Consumer Behaviour (M) as a critical mediating component in this connection. Brand growth, as a cumulative result, is significantly dependent on enduring consumer trust, happiness, and engagement, which are influenced by advancements in Consumer Behaviour rather than singular technological or logistical advances. The negligible direct effects may also indicate the characteristics of brand expansion in e-commerce, where operational and technological advancements frequently affect intermediary aspects like consumer perceptions and loyalty prior to impacting total brand performance. These findings correspond with the current research, which

underscores the pre-eminence of indirect paths in facilitating brand success. Consequently, the results indicate that enterprises such as Tokopedia ought to prioritize strategies that directly augment Consumer Behaviour—such as enhancing app usability, increasing delivery reliability, and cultivating trust through secure transactions—rather than anticipating immediate brand expansion from discrete operational enhancements. This practical insight underscores the mediating function of Consumer Behaviour (M) and emphasizes its significance in connecting technological and logistical innovations to quantifiable brand growth results.

6. Conclusion

The results demonstrated that all variables in the research model met the validity and reliability criteria evaluated by the outer model assessment method. The reliability study indicates that the Cronbach's Alpha and Composite Reliability scores for all constructs exceed the 0.70 threshold, indicating strong internal consistency. The Average Variance Extracted (AVE) values for all constructions surpass 0.50, confirming that the latent variables adequately account for the bulk of the variance in their indicators.

The evaluation of the structural model indicates strong explanatory capability, with R-squared values of 0.982 for Brand Growth (Y1) and 0.979 for Consumer Behaviour (M), illustrating that variations in Technological Innovations (X1) and Logistical Strategies (X2) explain a significant portion of the variance in these dependent variables.

In hypothesis testing, Technological Innovations (X1) and Logistical Strategies (X2) demonstrated no statistically significant direct effect on Brand Growth (Y1), with path coefficients of 0.228 ($p = 0.088$) and 0.209 ($p = 0.218$), respectively. Both factors exert a considerable influence on Consumer Behaviour (M), with path coefficients of 0.520 for X1 ($p < 0.05$) and 0.474 for X2 ($p < 0.05$). Consumer Behaviour (M) exerts a statistically significant direct influence on Brand Growth (Y1), evidenced by a path coefficient of 0.326 ($p = 0.029$). The mediation analysis reveals strong indirect effects, with the pathways X1 → M → Y1 (path coefficient = 0.142, $p = 0.021$) and X2 → M → Y1 (path coefficient = 0.118, $p = 0.050$) demonstrating statistical significance. These findings confirm that Consumer Behaviour mediates the link between Technological Innovations, Logistical Strategies, and Brand Growth.

This research highlights the crucial function of Consumer Behaviour as a mediating variable that converts technological and logistical advancements into measurable brand growth. The results indicate that corporate strategies must prioritize activities that improve Consumer Behaviour—such as building trust, satisfaction, and engagement—via technological advancements and logistical enhancements. Consumer-centric strategies are essential for optimizing the influence of operational improvements on brand growth.

7. Conclusion

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