Economic Value of Brand : The Role of Gamification, Price Fairness Perception, and Service Quality on Brand Equity through Customer Trust of Wardah Cosmetics

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Abstract:

This study aims to explore the economic value of brand equity by analyzing the roles of gamification, perceived price fairness, and service quality, with customer trust as a mediating variable. The research focuses on consumers of Wardah cosmetics on the Shopee e-commerce platform. A quantitative approach was employed using a purposive sampling technique with a total of 385 respondents. Data were collected through a structured questionnaire using a five-point Likert scale. The findings reveal that gamification, perceived price fairness, and service quality each have a positive and significant impact on customer trust. Furthermore, these three variables also directly influence brand equity positively and significantly. Customer trust itself has a significant mediating role in the relationship between the independent variables and brand equity. These results highlight that enhancing the interactive experience, ensuring fair pricing, and improving service quality contribute to building customer trust and, in turn, strengthening the economic value of the brand.

Keywords: *Economic Value of Brand, Gamification, Perceived Price Fairness, Service Quality, Brand Equity, Customer Trust, Wardah, Shopee.*

1. Introduction

The rapid growth of e-commerce in Indonesia has been largely driven by the increasing number of internet users and widespread smartphone adoption (Sifa, Masruroh, Zulfa, Fitriani, & Aprianto, 2024). This digital transformation has significantly changed the shopping habits of Indonesians, with platforms like Shopee becoming preferred channels for fulfilling daily needs, including beauty products. According to Rahmani et al. (2024), Indonesia's cosmetic market revenue is projected to reach USD 1.7 billion by 2025, positioning the country as one of the most lucrative markets in Southeast Asia. This growth has been fueled by consumers' increasing interest in skincare, makeup, and halal-certified beauty products that cater to local preferences and religious values.

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Wardah, as one of Indonesia's leading halal cosmetic brands, has successfully embraced this trend by strengthening its digital presence, particularly on Shopee, one of the largest e-commerce platforms in Southeast Asia (Riyanjaya & Andarini, 2022). The platform offers Wardah a wide digital storefront, enabling broader market outreach, especially among millennial and Gen Z consumers. These consumers are highly influenced by social media trends and interactive online features that shape their brand perceptions. As Adha (2022) note, the online ecosystem has transformed the traditional dimensions of brand communication into more dynamic and participative experiences, where consumer-brand interactions occur continuously and directly via digital touchpoints.

In the midst of intense competition in the online beauty market, brand equity has become a vital intangible asset for companies. Brand equity reflects the value a brand adds to a product, influencing consumer choice, price tolerance, and loyalty (Stevi & Artina, 2022). A strong brand equity not only leads to higher consumer trust and satisfaction but also increases customer retention, repurchase intention, and resistance to competitors' marketing tactics. This emphasizes the need for strategic efforts to strengthen brand equity in the digital realm.

Gamification, one of the most prominent digital engagement strategies, has shown significant potential in influencing brand equity. Gamification refers to the use of game-like elements such as points, rewards, leaderboards, and missions in non-game contexts to enhance user motivation and interaction (Arnold, 2014; Zahara, 2021). Shopee, for example, employs daily check-ins, coins, spin games, and loyalty missions to drive repeat usage and create a sense of fun and achievement among users. According to Nugraha & Sembodo (2023), gamification can generate emotional experiences and increase consumer enjoyment, which in turn fosters a stronger psychological connection with the brand. Moreover, when implemented effectively, gamification can promote positive brand associations, leading to increased engagement, satisfaction, and ultimately stronger brand equity (Matsumoto, 2016).

In addition to engagement strategies, perceived price fairness plays a critical role in shaping customer evaluations of a brand. Perceived price fairness refers to the extent to which consumers believe that the price of a product is reasonable, justifiable, and consistent with its quality and market conditions (Risfani & Ilfitriah, 2024). In the context of e-commerce, where consumers can easily compare prices across platforms and sellers, perceptions of fairness become crucial. When consumers perceive that they are being charged a fair price, they are more likely to trust the brand, feel satisfied, and commit to future purchases (Mahaputra & Saputra, 2022). Emphasize that in highly competitive sectors like beauty, perceived fairness can differentiate a brand in the eyes of consumers and prevent price-related dissatisfaction.

Another key determinant of brand equity in the e-commerce landscape is service quality. While physical product quality remains important, service quality aspects such as delivery speed, responsiveness to complaints, accuracy of product information, and the ease of transactions are equally influential (Mustika & Aswan,

2023). In digital platforms like Shopee, service quality becomes a shared responsibility between the platform and the brand. Poor delivery experience or lack of responsiveness can harm the brand's reputation even if the product quality is high. Ainassyifa (2023) found that service quality significantly impacts consumer trust and loyalty, particularly for products like cosmetics where the shopping experience includes both emotional and functional expectations. A seamless and satisfying service experience reinforces consumers' perception of the brand's credibility and commitment to customer satisfaction (Suardana & Madiarsa, 2024).

Underlying the influence of gamification, price fairness, and service quality is the mediating role of customer trust. Trust is a psychological state in which consumers believe that the brand will act in their best interest and deliver on its promises (Asshiddiqie, Wandebori, & Freiburghaus, 2025). In the online context, where consumers cannot physically examine the products before purchasing, trust becomes a prerequisite for engagement and purchase decisions. Asshiddiqie et.al (2025) argue that trust not only reduces perceived risk in online shopping but also serves as the foundation for brand commitment and loyalty. In digital beauty shopping, where issues like product authenticity, safety, and delivery reliability are paramount, establishing trust is essential for building strong and lasting customer relationships.

Despite the growing interest in these constructs, few studies have explored how gamification, perceived price fairness, and service quality influence brand equity through customer trust, especially in the Indonesian context and within halal beauty segments (Purnama, 2021). As Feng and Haridas (2025) indicate, research integrating these variables in a unified model is still limited. Most existing studies examine these factors independently, without considering how they interact through trust mechanisms in digital environments. This research addresses that gap by investigating how gamification, price fairness, and service quality affect the brand equity of Wardah on Shopee, with customer trust as a mediating variable. The study aims to provide theoretical insights into the digital branding process and practical implications for marketers aiming to enhance brand performance in e-commerce ecosystems.

2. Theoretical Background

The Effect of Gamification, Price Fairness Perception, and Service Quality on Customer Trust

Gamification in e-commerce platforms like Shopee is increasingly employed to enhance user engagement and emotional connection with brands. As highlighted by Amelia et al. (2023) and Robson et al. (2015), gamification motivates users by fulfilling intrinsic needs such as relatedness and autonomy, which in turn cultivates trust in digital environments. In the context of cosmetics, gamified experiences help create positive user-brand interactions (Ebrahimi et al., 2024; Milanesi et al., 2023), potentially fostering brand trust.

Perceived price fairness also plays a crucial role in shaping customer trust (Suyanto & Pramono, 2020). Studies by Xia et al. (2004), Anderson and Simester (2008), and Herrmann et al. (2007) indicate that when customers perceive prices as fair, they are more likely to trust the brand. Fair pricing is interpreted as an ethical and customer-oriented practice, which aligns with customer expectations and builds long-term trust (Ferguson, 2008; Cockril & Goode, 2010).

In addition, service quality strongly contributes to trust formation. High service performance, responsiveness, and empathy enhance customer satisfaction and perceived reliability (Agus et al., 2022; Anhar et al., 2024). According to Heryani and Rahayu (2017) and Efendi and Kholunnafiah (2023), service quality directly correlates with trust, especially in online settings where direct product examination is absent.

H1: *Gamification, perceived price fairness, and service quality have a positive effect on customer trust in Wardah consumers on Shopee.*

The Effect of Gamification, Price Fairness Perception, and Service Quality on Brand Equity
Brand equity is defined by consumer perceptions of brand strength, value, and credibility (Miharti, 2023; Mayliani et al., 2023). Gamification strategies enhance brand engagement and emotional connection, which are critical components of brand equity (Hsu & Chen, 2018; Setiawan & Kartikawangi, 2022). Gamified campaigns stimulate enjoyment and brand interactions, leading to stronger brand recall and preference (Nugraha & Sembodo, 2023; Srimuliyani, 2023).

Similarly, perceived price fairness reinforces consumers' perception of brand value. Studies by Kusuma and Sukaatmadja (2018), Sherli et al. (2023), and Risfani and Ilfitriah (2024) affirm that fair pricing perceptions enhance brand credibility and customer satisfaction, which are fundamental to building brand equity.

Service quality significantly enhances brand equity by contributing to positive customer experiences and perceived brand reliability. As shown by Amryyanti et al. (2013), Apriliana and Sukaris (2022), and Caniago (2022), consistent and reliable service delivery supports brand differentiation and customer retention, strengthening brand equity.

H2: *Gamification, perceived price fairness, and service quality have a positive effect on brand equity in Wardah consumers on Shopee.*

The Effect of Customer Trust on Brand Equity
Trust is a critical antecedent of brand equity. According to Colquitt et al. (2007), Schoorman et al. (2007), and Al Qadri et al. (2023), trust influences customer loyalty, brand preference, and advocacy, which collectively enhance brand equity. When customers perceive a brand as trustworthy, they are more likely to form favorable associations, repeat purchases, and strong brand loyalty (Rejeki & Atmaja, 2022; Erlinda et al., 2024).

Empirical evidence shows that trust reinforces perceived brand value and differentiates the brand in competitive online marketplaces (Goeltom et al., 2023; Pandiangan et al., 2021). Trust also acts as a psychological assurance in online transactions, making customers more emotionally and cognitively committed to the brand (Ningsih, 2020; Ebrahimi et al., 2024).

H3: Customer trust has a positive effect on brand equity in Wardah consumers on Shopee.

The Mediating Role of Customer Trust in the Relationship Between Gamification, Price Fairness, Service Quality, and Brand Equity

Customer trust serves as a key mediating variable linking gamification, perceived price fairness, and service quality to brand equity. As suggested by Hair et al. (2019) and Hidayat and Sulistyani (2021), trust mediates the effects of marketing stimuli on brand-related outcomes. Gamification, fair pricing, and superior service first cultivate trust, which then strengthens brand perceptions.

Previous research confirms the mediating role of trust in various brand-related constructs (Dasser et al., 2024; Febriawan et al., 2024). For instance, in the context of beauty and lifestyle e-commerce, trust significantly mediates the effect of value and experience on brand loyalty and equity (Anuradhani et al., 2024; Nugraha et al., 2024). The relationship between service, pricing, gamification, and brand equity is more impactful when trust is present as an intermediary (Aprileny et al., 2022; Zahara, 2021). Trust enables a psychological bond between consumers and brands, making consumers more receptive to gamified features, pricing fairness, and reliable service.

H4: Customer trust mediates the effect of gamification, perceived price fairness, and service quality on brand equity in Wardah consumers on Shopee.

3. Methodology

This study targets a population consisting of Indonesian consumers who have purchased Wardah products through the Shopee e-commerce platform and have used at least one gamification feature offered by Shopee (e.g., Shopee Tanam or Shopee Games). Since the exact size of this population is unknown, it is classified as an infinite population. The sample is defined as a subset of the population selected to represent the larger group, and it plays a critical role in ensuring generalizability. Therefore, the sample size was calculated using the Lemeshow formula, which is applicable when population size is undetermined. Based on a 95% confidence level ($Z = 1.96$), an estimated proportion ($p = 0.5$), and a margin of error ($d = 0.05$), the required minimum sample size is 385 respondents.

The sampling technique employed in this study is non-probability sampling, specifically purposive sampling, which selects respondents based on predefined criteria aligned with the study's objectives. The criteria for inclusion are: (1) consumers who have purchased Wardah products via Shopee within the last three months, and (2) consumers who have actively used Shopee's gamification features within the same time frame. The filtering process is embedded in the opening section

of the Google Form questionnaire. Respondents must answer "yes" to all three qualifying questions; otherwise, they are automatically excluded from continuing the survey. Once 385 qualified responses are collected, data collection is considered complete.

The primary data collection instrument is a questionnaire, which is widely used for collecting quantitative data (Miftah, 2013) . The questionnaire consists of structured, closed-ended statements measured using a Likert scale ranging from "Strongly Disagree" to "Strongly Agree." This method is effective for capturing respondents' perceptions and satisfaction levels (Megasari & Latif, 2022). In addition to primary data, the study also utilizes secondary data from various sources, including online databases, journal articles, e-books, and reports, to support and triangulate findings.

Regarding data sources, the study uses both primary and secondary data. Primary data are obtained directly from the qualified respondents through the online questionnaire, while secondary data are collected from relevant literature and institutional publications that support the theoretical framework and contextual background of the study. The combination of both data sources strengthens the validity and credibility of the research. Data analysis will be conducted using descriptive statistics and Partial Least Squares Structural Equation Modeling (PLS-SEM), enabling the researcher to test both measurement and structural models simultaneously (Nur Sasongko, Mustafid & Rusgiyono, 2016).

4. Empirical Findings/Results

Evaluation of the Measurement Model (Outer Model) – First Order Level
Convergent Validity (First Order Level)
In evaluating the convergent validity of a reflective measurement model, it is assessed by examining the relationship between each indicator (question item) and the construct (latent variable) it is intended to measure. This relationship is indicated by the loading factor or outer loading, which represents the correlation between the indicator and its construct. A high loading value indicates that the indicator accurately represents the construct. In general, an indicator is considered reliable if its loading value exceeds 0.70.

Table 1.Convergent Validity Values – First Order

Latent Construct	Dimension	Indicator Code	Outer Loadings	Criteria
		POI1	0.854	Valid
	Points	POI2	0.826	Valid
		POI3	0.867	Valid
		LEA1	0.832	Valid
Gamification (X1)	Leaderboards	LEA2	0.830	Valid
		LEA3	0.877	Valid
		BDG1	0.889	Valid
	Badges	BDG2	0.898	Valid
		TRE1	0.902	Valid

Price Fairness Perception (X2)	Treatment Experience	TRE2	0.898	Valid
	Price Knowledge	PRK1	0.889	Valid
		PRK2	0.888	Valid
	Price Expectation	PRE1	0.896	Valid
		PRE2	0.902	Valid
	Price Information	PRI1	0.896	Valid
		PRI2	0.897	Valid
Service Quality (X3)	Tangibles	TAN1	0.892	Valid
		TAN2	0.912	Valid
	Empathy	EMP1	0.901	Valid
		EMP2	0.905	Valid
	Reliability	REL1	0.892	Valid
		REL2	0.897	Valid
	Responsiveness	RES1	0.889	Valid
		RES2	0.896	Valid
	Assurance	ASS1	0.887	Valid
		ASS2	0.899	Valid
Brand Equity (Y1)	Brand Awareness	BRW1	0.900	Valid
		BRW2	0.846	Valid
		BRW3	0.806	Valid
	Perceived Quality	PEQ1	0.831	Valid
		PEQ2	0.843	Valid
		PEQ3	0.794	Valid
	Brand Associations	BRS1	0.851	Valid
		BRS2	0.855	Valid
		BRS3	0.857	Valid
	Brand Loyalty	BRL1	0.819	Valid
		BRL2	0.890	Valid
		BRL3	0.885	Valid
Customer Trust (Z1)	Ability Best Service	ABS1	0.911	Valid
		ABS2	0.921	Valid
	Benevolence	BEN1	0.875	Valid
		BEN2	0.895	Valid
	Integrity	INT1	0.916	Valid
		INT2	0.907	Valid
	Consistency	CON1	0.910	Valid
		CON2	0.904	Valid
	Transparency	TRP1	0.887	Valid
		TRP2	0.877	Valid
	Dependability	DEP1	0.917	Valid
		DEP2	0.924	Valid
	Honesty	HON1	0.886	Valid
		HON2	0.882	Valid
	Value	VAL1	0.889	Valid

| | VAL2 | 0.909 | Valid |

Source: Processed data by the researcher, 2025.

Based on Table 1, all measurement items at the first-order level have loading factor values ≥ 0.70. This indicates that the measurement items are valid and meet the requirements for convergent validity.

Discriminant Validity (First Order Level)

Discriminant validity can be assessed by examining the **cross-loading** values, which ensure that each indicator has the highest correlation with the construct it is intended to measure and lower correlations with other constructs. In addition, discriminant validity can also be evaluated using the **Fornell-Larcker criterion**, which compares the square root of the AVE value of each construct. The square root of the AVE must be greater than the correlations between that construct and other constructs in the model.

Table 2.Discriminant Validity Values – First Order Level

Indicator	Cross Loading	FLC	AVE	Conclusion
1	2	3	4	5
POI1 <- Poin	0,854			Valid
POI2 <- Poin	0,826	0,849	0,721	Valid
POI3 <- Poin	0,867			Valid
LEA1 <- Leaderboards	0,832			Valid
LEA2 <- Leaderboards	0,830	0,847	0,717	Valid
LEA3 <- Leaderboards	0,877			Valid
BDG1 <- Badges	0,889	0,893	0,798	Valid
BDG2 <- Badges	0,898			Valid
TRE1 <- Treatment Experience	0,902	0,900	0,810	Valid
TRE2 <- Treatment Experience	0,898			Valid
PRK1 <- Price Knowledge	0,889	0,889	0,790	Valid
PRK2 <- Price Knowledge	0,888			Valid
PRE1 <- Price Expectation	0,896	0,899	0,808	Valid
PRE2 <- Price Expectation	0,902			Valid
PRI1 <- Price Information	0,896	0,896	0,803	Valid
PRI2 <- Price Information	0,897			Valid
TAN1 <- Tangibles	0,892	0,902	0,814	Valid
TAN2 <- Tangibles	0,912			Valid
EMP1 <- Emphaty	0,901	0,903	0,815	Valid
EMP2 <- Emphaty	0,905			Valid
REL1 <- Reliability	0,892	0,895	0,800	Valid
REL2 <- Reliability	0,897			Valid
RES1 <- Responsiveness	0,889	0,892	0,796	Valid
RES2 <- Responsiveness	0,896			Valid
ASS1 <- Assurance	0,887	0,893	0,797	Valid
ASS2 <- Assurance	0,899			Valid

BRW1 <- Brand Awareness	0,900			Valid
BRW2 <- Brand Awareness	0,846	0,852	0,726	Valid
BRW3 <- Brand Awareness	0,806			Valid
PEQ1 <- Perceived Quality	0,831			Valid
PEQ2 <- Perceived Quality	0,843	0,823	0,677	Valid
PEQ3 <- Perceived Quality	0,794			Valid
BRS1 <- Brand Association	0,851			Valid
BRS2 <- Brand Association	0,855	0,854	0,730	Valid
BRS3 <- Brand Association	0,857			Valid
BRL1 <- Brand Loyalty	0,819			Valid
BRL2 <- Brand Loyalty	0,890	0,865	0,748	Valid
BRL3 <- Brand Loyalty	0,885			Valid
ABS1 <- Ability Best Service	0,911			Valid
ABS2 <- Ability Best Service	0,921	0,916	0,839	Valid
BEN1 <- Benevolence	0,875			Valid
BEN2 <- Benevolence	0,895	0,885	0,784	Valid
INT1 <- Integrity	0,916			Valid
INT2 <- Integrity	0,907	0,911	0,830	Valid
CON1 <- Consist	0,910			Valid
CON2 <- Consist	0,904	0,907	0,823	Valid
TRP1 <- Transparency	0,887			Valid
TRP2 <- Transparency	0,877	0,882	0,778	Valid
DEP1 <- Dependability	0,917			Valid
DEP2 <- Dependability	0,924	0,920	0,847	Valid
HON1 <- Honest	0,886			Valid
HON2 <- Honest	0,882	0,884	0,782	Valid
VAL1 <-Valuaeable	0,889			Valid
VAL2 <- Valueable	0,909	0,899	0,809	Valid

Source: Data processed by the researcher, 2025.

The table above shows that each item has the highest cross loading on its intended construct, indicating that discriminant validity is fulfilled. The Fornell-Larcker results also support this, as the AVE value of each construct is greater than its correlation with other constructs.

Reliability Test (First Order Level)
The reliability test of constructs is conducted by examining two measures: **composite reliability** and **Cronbach's alpha**, which are calculated from the set of indicators measuring the construct. A construct is considered reliable if both values exceed the threshold of 0.60 to 0.70.

Table 3.First Order Reliability Values

Construct	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Description
Ability Best Service	0.809	0.810	0.913	Reliable

Assurance	0.745	0.747	0.887	Reliable
Badges	0.747	0.748	0.888	Reliable
Benevolence	0.724	0.727	0.879	Reliable
Brand Associations	0.815	0.815	0.890	Reliable
Brand Awareness	0.810	0.812	0.888	Reliable
Brand Loyalty	0.831	0.833	0.899	Reliable
Consist	0.785	0.785	0.903	Reliable
Dependability	0.819	0.821	0.917	Reliable
Brand Equity	0.941	0.941	0.949	Reliable
Empathy	0.773	0.773	0.898	Reliable
Gamification	0.918	0.919	0.934	Reliable
Honest	0.721	0.721	0.877	Reliable
Integrity	0.796	0.797	0.907	Reliable
Customer Trust	0.951	0.951	0.956	Reliable
Service Quality	0.939	0.939	0.948	Reliable
Leaderboards	0.802	0.804	0.884	Reliable
Perceived Quality	0.761	0.762	0.863	Reliable
Price Fairness Perception	0.924	0.924	0.938	Reliable
Points	0.807	0.807	0.886	Reliable
Price Expectation	0.763	0.763	0.894	Reliable
Price Information	0.754	0.754	0.891	Reliable
Price Knowledge	0.734	0.734	0.883	Reliable
Reliability	0.751	0.751	0.889	Reliable
Responsiveness	0.744	0.744	0.886	Reliable
Tangibles	0.772	0.777	0.897	Reliable
Transparency	0.715	0.715	0.875	Reliable
Treatment Experience	0.765	0.765	0.895	Reliable
Valuable	0.764	0.769	0.894	Reliable

Source: Data processed by the researcher, 2025.

Based on the table above, it can be concluded that all constructs are reliable because their composite reliability and Cronbach's alpha values exceed the minimum threshold of 0.60.

Measurement Model Evaluation (Outer Model) – Second Order Level

After completing the evaluation at the dimensional level to ensure that each indicator contributes to forming its respective dimension, the next step is to test at the **construct (second-order)** level, to ensure that these dimensions truly represent their respective latent variables. The second-order level test is conducted using **latent variable scores** obtained from the previous stage.

1. Convergent Validity (Second Order Level)

Convergent validity at the second-order level is considered valid if the **outer loading** or **loading factor** is ≥ 0.70.

Table 4.Second Order Convergent Validity Values

Latent Construct	Indicator	Outer Loadings	Communality (Outer Loadings²)	Criteria
Gamification (X1)	Badges	0.931	0.9	Valid
	Leaderboards	0.943	0.9	Valid
	Points	0.912	0.8	Valid
Perceived Price Fairness (X2)	Price Expectation	0.914	0.8	Valid
	Price Information	0.914	0.8	Valid
	Price Knowledge	0.903	0.8	Valid
	Treatment Experience	0.879	0.8	Valid
Service Quality (X3)	Assurance	0.898	0.8	Valid
	Empathy	0.896	0.8	Valid
	Reliability	0.894	0.8	Valid
	Responsiveness	0.901	0.8	Valid
	Tangibles	0.893	0.8	Valid
Brand Equity (Y1)	Brand Associations	0.912	0.8	Valid
	Brand Awareness	0.922	0.8	Valid
	Brand Loyalty	0.909	0.8	Valid
	Perceived Quality	0.927	0.9	Valid
Customer Trust (Z1)	Ability Best Service	0.807	0.7	Valid
	Benevolence	0.866	0.7	Valid
	Consistency	0.843	0.7	Valid
	Dependability	0.842	0.7	Valid
	Honesty	0.844	0.7	Valid
	Integrity	0.849	0.7	Valid
	Transparency	0.854	0.7	Valid
	Valuable	0.840	0.7	Valid

Source: Data processed by the researcher, 2025.

Based on the table above, each item is considered valid as it demonstrates strong measurement of its respective second-order construct, indicated by loading factors above 0.70.

2. Discriminant Validity (Second Order Level)

Discriminant validity is assessed by examining **Fornell-Larcker criterion**, as shown below:

Table 5. Fornell-Larcker Criterion – Second Order

Construct	Brand Equity	Gamification	Customer Trust	Service Quality	Perceived Price Fairness
Brand Equity	**0.918**				
Gamification	0.810	**0.929**			
Customer Trust	0.729	0.713	**0.843**		
Service Quality	0.827	0.825	0.727	**0.896**	

Perceived Price Fairness	0.813	0.792	0.709	0.831	**0.902**

Source: Data processed by the researcher, 2025.

Discriminant validity is confirmed through both the cross-loading and Fornell-Larcker tables. Each construct shows a higher correlation with its indicators than with other constructs. For example, **Brand Equity** has a square root AVE of **0.918**, which is greater than its correlation with **Gamification** (0.810) or **Customer Trust** (0.729), thereby fulfilling the discriminant validity requirement.

3. Reliability Test (Second Order Level)

Construct reliability is assessed through **composite reliability** and **Cronbach's alpha**, based on the set of indicators that form the construct. A construct is considered reliable if both values exceed the threshold of 0.60 to 0.70.

Table 6. Second Order Reliability Values

Construct	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	AVE	Description
Brand Equity	0.938	0.938	0.955	0.842	Reliable
Gamification	0.920	0.921	0.950	0.863	Reliable
Customer Trust	0.942	0.944	0.952	0.711	Reliable
Service Quality	0.939	0.939	0.953	0.803	Reliable
Perceived Price Fairness	0.924	0.924	0.946	0.814	Reliable

Source: Data processed by the researcher, 2025.

Based on the table above, all five constructs—Gamification, Perceived Price Fairness, Service Quality, Customer Trust, and Brand Equityshow Cronbach's alpha and composite reliability values well above the 0.60 threshold, confirming that they are **reliable**.

Structural Model Evaluation (Inner Model) – Second Order Level

After all the criteria for evaluating the measurement model have been met, the next step is to evaluate the structural model, which involves testing multicollinearity, hypothesis testing, and assessing F-Square values.

1. Multicollinearity Test

The first step in evaluating the structural model is to ensure that there is no multicollinearity between variables, which is assessed through the inner VIF (Variance Inflation Factor) values. If the inner VIF value is < 5, it indicates that there is no multicollinearity issue among the variables.

Table 7. *Inner Variance Inflated Factor – Second Order*

Construct	VIF
Gamification -> Brand Equity	3.721
Gamification -> Customer Trust	3.542
Customer Trust -> Brand Equity	2.408
Service Quality -> Brand Equity	4.479
Service Quality -> Customer Trust	4.264

Price Fairness Perception -> Brand Equity	3.790
Price Fairness Perception -> Customer Trust	3.645

Source: Data processed by the researcher, 2025.

Based on the table above, all inner VIF values are below 7, indicating no multicollinearity between variables.

2. Hypothesis Testing

The second step in evaluating the structural model is to test the relationships between variables using t-statistics or p-values.

Table 8. *Hypothesis Testing Results – Bootstrapping Technique*

Construct	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistic	P-Value
Gamification -> Customer Trust	0.273	0.271	0.076	3.571	0.000
Price Fairness Perception -> Customer Trust	0.245	0.237	0.081	3.022	0.003
Service Quality -> Customer Trust	0.298	0.306	0.085	3.511	0.000
Gamification -> Brand Equity	0.259	0.251	0.120	2.166	0.030
Price Fairness Perception -> Brand Equity	0.269	0.275	0.093	2.884	0.004
Service Quality -> Brand Equity	0.281	0.278	0.112	2.511	0.012
Customer Trust -> Brand Equity	0.149	0.153	0.054	2.745	0.006

Source: Processed data by the researcher, 2025.

If the t-statistic value exceeds 1.96 or the p-value is less than 0.05, it indicates a significant relationship between variables. Based on the path coefficients presented in Table 8, all direct effects in the model are positive and statistically significant. Specifically, gamification has a significant positive effect on customer trust (β = 0.273; t = 3.571; p = 0.000) and brand equity (β = 0.259; t = 2.166; p = 0.030). Price fairness perception also significantly influences customer trust (β = 0.245; t = 3.022; p = 0.003) and brand equity (β = 0.269; t = 2.884; p = 0.004). Similarly, service quality positively affects both customer trust (β = 0.298; t = 3.511; p = 0.000) and brand equity (β = 0.281; t = 2.511; p = 0.012). Lastly, customer trust significantly impacts brand equity (β = 0.149; t = 2.745; p = 0.006). These findings confirm that all proposed hypotheses are supported and accepted.

The next step is to conduct a **mediation test** to determine whether customer trust serves as a mediator between the exogenous and endogenous variables. This test was performed using SmartPLS 4, and the results are shown in the table below.

Table 9.*Indirect Effects – Bootstrapping*

Construct	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistic	P-Value
Gamification → Customer Trust	0.041	0.042	0.020	2.007	0.045

→ Brand Equity					
Price Fairness Perception → Customer Trust → Brand Equity	0.036	0.036	0.018	2.061	0.039
Service Quality → Customer Trust → Brand Equity	0.044	0.047	0.022	2.049	0.041

Source: Processed data by the researcher, 2025.

The results of the indirect effect analysis indicate that customer trust significantly mediates the relationship between the independent variables and brand equity. Specifically, gamification has an indirect positive and significant effect on brand equity through customer trust, with a p-value of 0.045 (< 0.05), indicating that customer trust acts as a mediator in this relationship. Likewise, price fairness perception indirectly influences brand equity via customer trust, as shown by a p-value of 0.039 (< 0.05), confirming a significant mediating effect. Similarly, service quality also has a significant indirect effect on brand equity through customer trust, with a p-value of 0.041 (< 0.05). These findings suggest that customer trust plays a critical mediating role in channeling the effects of gamification, price fairness perception, and service quality toward enhancing brand equity, thus supporting all proposed mediation hypotheses.

3. F-Square
F-Square is used to assess the effect size of an exogenous variable on an endogenous variable. Criteria:
1.   0.02 = small effect
2.   0.15 = medium effect
3.   0.35 = large effect

Table 10. *F-Square Values*

Latent Construct	F-Square
Gamification → Brand Equity	0.079
Gamification → Customer Trust	0.050
Customer Trust → Brand Equity	0.040
Service Quality → Brand Equity	0.077
Service Quality → Customer Trust	0.050
Price Fairness Perception → Brand Equity	0.083
Price Fairness Perception → Customer Trust	0.040

Source: Processed data by the researcher, 2025.
Interpretation: All relationships show small effects, as all F-square values are below 0.15.

Evaluation of Model Fit and Suitability

1. R Square
R Square indicates how much variance in the dependent variable can be explained by the independent variables.
1.   0.67 = high
2.   0.33 = moderate

3.   0.19 = low

Table 11. *R Square Values*

Latent Construct	R Square	Category
Brand Equity	0.770	High
Customer Trust	0.585	Moderate

Source: Processed data by the researcher, 2025.

The interpretation of the R-square values indicates that the model has a strong explanatory power for the dependent variables. Specifically, brand equity is explained by 77% of the variance, demonstrating a high level of predictive power, meaning the independent variables in the model effectively account for most of the changes in brand equity. Meanwhile, customer trust is explained by 58.5% of the variance, indicating a moderate predictive power, which shows that while the model explains a substantial portion of customer trust, there are still other factors outside the model contributing to its variation.

2. Q Square
Q Square indicates the predictive relevance of the model.
1. $Q^2 < 0$ = No predictive relevance
2. $Q^2 \geq 0.25$ = Moderate
3. $Q^2 \geq 0.50$ = High

Table 12. *Q Square Values*

Construct	Q^2	Category
Brand Equity	0.642	High
Customer Trust	0.407	Moderate

Source: Processed data by the researcher, 2025.

The Q-square values indicate that the model has strong predictive relevance for the studied variables. Brand equity demonstrates high predictive relevance, meaning the model reliably predicts changes in brand equity. In contrast, customer trust shows moderate predictive relevance, suggesting the model provides a reasonable but less robust prediction for this variable compared to brand equity.

3. Goodness of Fit (GoF)
GoF measures the overall model fit and is calculated using the formula:
GoF = √(average communality × average R Square)
1.   Average communality: 0.788
2.   Average R Square: 0.68
3.   GoF = √(0.788 × 0.68) = √0.5341 = **0.731**

Table 13. *Goodness of Fit Index*

Avg. Communality	Avg. R Square	GoF	Category
0.788	0.68	0.731	High

Source: Processed data by the researcher, 2025.

GoF score of 0.731 exceeds the high threshold (0.36), indicating that the model has a very good overall fit and is appropriate for explaining the relationships among the variables.

5. Discussion

This study examines the conditions of gamification, price fairness perception, service quality, brand equity, and customer trust among Wardah consumers on Shopee's e-commerce platform. Gamification is defined as a method of making activities feel like a game (Chandross & DeCourcy, 2018). According to Tresnawati, Rahayu, and Garnisa (2023), gamification uses game elements to create enjoyable user experiences. In app usage, gamification aims to make applications more attractive and user-friendly by integrating common game elements such as points, leaderboards, and badges (Amelia et al., 2023; Marisa et al., 2020; Yunita & Indrajit, 2022; Zahara, 2021). In digital marketing, gamification combines game elements into non-game activities to enhance user enjoyment and assist businesses in achieving their goals (Chandross & DeCourcy, 2018).

Price fairness perception describes how consumers assess whether a product's price is reasonable, fair, and appropriate to the value received (Amryyanti et al., 2013; Thaler, 1985). This assessment goes beyond the nominal price and includes price transparency, pricing processes, and comparison with competitors or other consumers. If the price is seen as disproportionate or unclear, consumers perceive it as unfair, negatively impacting purchase decisions and loyalty. When products meet benefits and expectations, prices tend to be perceived as fair (Budiyono & Sutianingsih, 2021). The study finds Wardah consumers' price fairness perception on Shopee to be very good, especially valuing price transparency. However, fairness for all consumers and promotion transparency still require improvement to foster fairness perceptions and increase purchase interest and customer loyalty.

Service quality toward Wardah consumers on Shopee is also rated very well, especially responsiveness Wardah's ability to respond helpfully and communicatively to questions and complaints. Yet, speed of service delivery needs improvement, as reflected by the "Wardah service is fast" indicator. Responsiveness means being ready and attentive to customers, whereas speed concerns how quickly service or delivery is completed. Improving both responsiveness and speed would strengthen overall perceptions of Wardah's service quality (Ainassyifa, 2023; Heryani & Rahayu, 2017; Kurniawan, Purwanti, & Kurnita, 2020).

Brand equity generally refers to a product's position or image in consumers' minds compared to unbranded products (Sukmarani, 2022). It is a key indicator of how strongly a brand influences purchase decisions. Stevi and Artina (2022) emphasize that brand equity reflects the added value embedded in a brand, making it easier to recognize and recall. Strong brand equity enhances competitive positioning and builds consumer loyalty and preference (Triaji, 2022; Ustaha & Noor, 2023). This study finds Wardah's brand equity on Shopee rated very good, as consumers associate

Wardah with good quality and fair prices. However, consumer willingness to recommend Wardah is lower, possibly due to insufficient emotional connection or memorable experiences post-purchase. To address this, Wardah could develop experiential marketing strategies, loyalty programs, testimonials, or referral incentives such as discounts for recommending others to buy Wardah on Shopee, which could increase recommendation intention, loyalty, and customer base.

Customer trust in Wardah on Shopee is very high, primarily driven by accurate and clear product information such as descriptions, benefits, and ingredients. This clarity makes consumers confident and secure when purchasing. However, two areas need improvement: first, Wardah's brand image as a truly trusted brand on Shopee is still not strong, potentially due to limited emotional communication or credibility campaigns. Second, Wardah's commitment to honoring promotional promises and discounts needs attention, as some consumers feel promotions do not always meet expectations (Erlinda, Rachmat, Widyantoro, & Harsono, 2024; Suastini & Mandala, 2019).

The analysis shows gamification, price fairness perception, and service quality positively and significantly influence customer trust. Gamification's most dominant dimension is leaderboards, supported by indicators like buyer benefits at high levels, consumer attention to rankings and user reviews, and attraction to the "best seller" label (N. Ningsih, 2021; W. A. Nugraha et al., 2024; Salsabila, Rifan, & Rosilawati, 2025; Setiawan & Kartikawangi, 2022; Widyani, 2021). Fair price perception, especially price expectation and information, also strengthens trust as consumers find prices aligned with expectations and competitors, with clear and accessible pricing (Herrmann et al., 2007; Kusuma & Sukaatmadja, 2018; Shaliza et al., 2024). Service quality, especially responsiveness reflected by service speed and easy returns/refunds, increases trust by meeting customer needs promptly (Ainassyifa, 2023; Heryani & Rahayu, 2017; Kurniawan, Purwanti, & Kurnita, 2020).

Lastly, gamification, price fairness, and service quality positively and significantly affect Wardah's brand equity. Gamification creates enjoyable experiences, fostering emotional engagement and loyalty, thus strengthening brand recall compared to competitors (D. A. Nugraha & Sembodo, 2023; Pranjono & Tjokrosaputro, 2024; Widyani, 2021). Price fairness enhances brand image and loyalty by ensuring transparent and competitive pricing (Nugroho & Santosa, 2024; Shaliza et al., 2024). High service quality produces satisfying shopping experiences that build loyalty and emotional bonds with the brand (Widjaya & Ellitan, 2025; Pertiwi, Ali, & Sumantyo, 2022; Wulandari & Rastini, 2022). Trust mediates these effects, serving as a foundation for long-term brand equity growth (Ebrahimi, Irani, Abbasi, & Abedini, 2024; Erlinda et al., 2024). Therefore, Wardah must continue to optimize gamification features, maintain fair and transparent pricing, and deliver excellent service to sustain and grow brand equity on Shopee.

6. Conclusions

Based on the results of data analysis, several conclusions can be drawn. First, respondents' perceptions indicate that gamification, perceived price fairness, service quality, customer trust, and brand equity regarding Wardah products on Shopee are all rated very positively. This reflects the company's success in creating a shopping experience that is enjoyable, fair, and trustworthy, thereby strengthening brand positioning in the minds of consumers. Second, gamification, perceived price fairness, and service quality have a positive and significant influence on customer trust. This highlights the importance of interactive strategies, reasonable pricing, and quality service in building and enhancing consumer trust toward the brand.

Third, gamification, perceived price fairness, and service quality also significantly contribute to brand equity. These findings demonstrate that companies capable of delivering engaging experiences, fair pricing, and consistently high service quality can increase brand value in the eyes of consumers. Fourth, customer trust has a significant positive effect on brand equity, reinforcing the importance of trust as a foundation for brand loyalty and positive brand perception. Finally, customer trust mediates the influence of gamification, perceived price fairness, and service quality on brand equity, confirming its pivotal role in strengthening these relationships.

Recommendations

For Businesses: The results indicate that Wardah's strategies on Shopee especially in gamification, perceived price fairness, and service quality are already excellent. However, regular evaluation is still necessary. Improvements in gamification should focus on the "points" dimension, such as offering exclusive Wardah vouchers as loyalty rewards. For price fairness, transparency can be improved in displaying discounts and promotional explanations. For service quality, responsiveness can be enhanced by implementing fast-response customer service tools such as live chats or AI-based chatbots.

Moreover, since these three variables significantly affect customer trust, it is recommended that Wardah consistently maintain and enhance these strategies. The company should further develop gamification features, ensure competitive pricing transparency, and maintain reliable customer service, especially in areas like returns and refunds. Strengthening customer trust through integrity, accurate communication, and fulfilling brand promises should become a key part of the marketing strategy. Ultimately, trust serves as a central element that connects interactive features, fair pricing, and quality service to long-term brand equity in a competitive e-commerce environment.

For Future Researchers: This study found that gamification, price fairness, and service quality explain 58.5% of the variance in customer trust and 77% in brand equity. This suggests that there are still other variables influencing these constructs. Future research could explore additional factors that may influence trust and brand

equity such as customer experience, emotional engagement, or social proof. Further, future studies are encouraged to apply this model to different brands, e-commerce platforms (e.g., Tokopedia, TikTok Shop), and demographic segments (e.g., by generation, income, or education) to compare behavioral patterns and perceptions.

Lastly, future research should consider using varied methodological approaches. A qualitative approach, such as in-depth interviews or focus group discussions, could provide richer insights into consumer experiences and perceptions. A mixed-methods design could also be beneficial in combining the strengths of quantitative and qualitative analyses to generate more comprehensive findings applicable across broader contexts and industries such as fashion, electronics, or home goods.

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