



RESEARCH ARTICLE

The Relationship between Brand Association, Brand Awareness and Brand Image in Improving Perceived Quality in the Telecommunications Company Industry

Isnawijayani^{1*}, Martha Wulandari², Sulaiman Helmi³, Tiara Kartika⁴, Lalu Supardin⁵

^{1,2,3,4} Universitas Bina Darma, Palembang, Indonesia

⁵ Universitas Sarjanawatiata Tamansiswa, Yogyakarta, Indonesia

ARTICLE INFO	ABSTRACT
<p>Received: Dec 19, 2024</p> <p>Accepted: Jan 31, 2025</p> <p>Keywords</p> <p>Brand Association</p> <p>Brand Awareness</p> <p>Brand Image</p> <p>Perceived Quality and Structural Equation Modeling (SEM)</p>	<p>This study investigates the quality perceptions 150 customers at PT XX towards brand elements, including brand association, brand image, and brand awareness. Brand association refers to the mental associations that consumers have with a brand, while brand image is the overall image formed in the minds of consumers. Meanwhile, brand awareness describes the extent to which consumers recognize and remember the brand. This study aims to analyze the relationship between brand association, brand image, and brand awareness in improving perceived quality at PT XX company. Data was collected through a survey involving PT XX consumers, and analysis was conducted using statistical methods to identify the influence of the three brand elements on consumers' perceived quality. Along with the increasing integration of technology in various sectors, including in the information and communication technology (ICT) industry, it is important to understand how elements such as brand association, brand awareness, and brand image affect the perceived quality of PT XX PT XX's products and services. PT XX, as an ICT service provider that offers technology-based business solutions, has a crucial role in shaping the perception of quality in the eyes of consumers. This study, using Partial Least Squares-Structural Equation Modeling (PLS-SEM), aims to analyze the relationship between the three elements and quality perception, as well as the implications for technology implementation in the corporate sector. The findings show that brand association, brand awareness, and brand image play an important role in shaping the perceived quality of PT XX PT XX's products and services. Although brand awareness is important to introduce the brand, positive brand association and brand image are proven to have a significant influence on consumers' perceived quality. Therefore, to continue to grow and compete in the ICT industry, PT XX needs to focus on strengthening positive brand associations and a strong brand image, by emphasizing the quality, innovation, and reliability of their products and services.</p>
<p>*Corresponding Author:</p> <p>Isnawijayani@binadarma.ac.id</p>	

1. INTRODUCTION

1.1 Overview of PT XX

PT XX is a company engaged in the telecommunications and information technology solutions sector in Indonesia. PT XX is recognized as a provider of data network services, communications, and technology solutions for various industry sectors, including government, healthcare, education, and private companies. As part of the company's strategy to strengthen its brand position in a highly competitive market, Lintasplarta focuses on managing brand association, brand image, and brand awareness to improve the perceived quality of the products and services it offers.

In the telecommunications industry, perceived quality is an important element that influences consumers' decisions in choosing a service provider. Therefore, PT XX needs to build a strong relationship between the three brand elements-brand association, brand image, and brand awareness-to create a positive perception of quality in the eyes of consumers A. Zia et al. (2021). High brand value indicates strong brand associations with customers. Image recognition and narrative awareness facilitate customer associations with the brand, creating a positive impact that contributes to effective brand value (Dada, 2021). Brand associations enhance customers' sense of belonging and foster the relationship between customers and the brand (Eisenbeiss et al., 2021). Brand image is also shaped by real experiences shared by previous customers. Reviews and recommendations from satisfied consumers can strengthen brand image and improve quality perceptions. (Zhou, X., & Zhang, H., 2023). The brand image built is not only based on the functional quality of the product, but also on the emotional value possessed by the brand (Nguyen, B., & Simkin, L., 2024). Brand awareness increases consumer confidence in the brand. When consumers recognize a brand well, they often assume that the products of that brand are of high quality, because they have more confidence in products from brands that have been in the market for a long time (Chaudhuri, A., & Holbrook, M. B., 2019). High brand awareness is often driven by intense marketing activities, such as advertisements, promotions, or sponsorships. When consumers see a brand consistently through multiple channels, they are more likely to associate the brand with good quality. This is especially true if the brand reinforces an image of high quality through appropriate advertising messages and consistent communication strategies (Keller, K. L., 2021).

Overall, brand association, brand image, and brand awareness have a major influence on PT XX's perceived quality. To improve their perceived quality, PT XX should strengthen brand associations associated with high quality and innovation, improve their brand image in the broader market, and increase brand awareness among general consumers. Through a more focused and consistent marketing strategy, PT XX can improve perceived quality and expand their brand reach in the telecommunications market.

Previous researchers underline that brand association, brand image, and brand awareness play a very important role in shaping perceived quality. Companies need to build strong and relevant brand associations to improve quality perceptions and customer trust in brands. (Boulding 2020), the importance of brand image in creating quality perceptions, and how a positive brand image is directly related to strengthening quality perceptions by consumers (Keller, 2021) and high brand awareness can increase consumer perceptions of the quality of products or services offered by the brand (Li, X., & Zhang, M., 2023). These three elements are interrelated and mutually reinforcing, and companies that can manage and build all three well will be able to create better quality perceptions in the eyes of consumers, which in turn will increase loyalty and purchasing decisions.

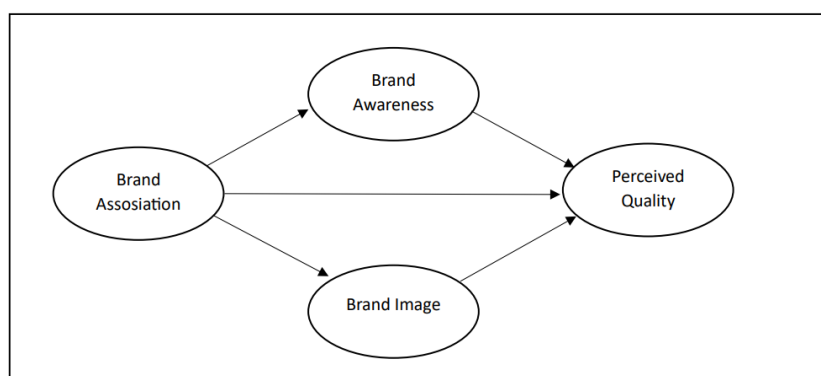


Figure 1: Hypothetical research model.

1.2 Research objectives

The objectives of this study are summarized as follows:

- To analyze the relationship between brand association, brand awareness and brand image in improving perceived quality at PT XX company.

2. MATERIALS AND METHODS

2.1 Research design

This study investigates the relationship between the of brand association, brand image and brand awareness in improving perceived quality. This research uses a quantitative survey design, and a questionnaire is used as a survey method (Hair, 2020). This survey is structured in the form of a questionnaire to evaluate brand association, brand image and brand awareness in improving perceived quality. The questions were developed based on existing scales from previous research to ensure their validity (Malhotra, N. K. (2019).

This study aims to investigate how the elements of brand association, brand image and brand awareness increase PT XX's perceived quality. Specifically, this study aims to describe the relationship between the variables studied and analyze the influence between variables. The collected data will be analyzed using the Structural Equation Modeling (SEM) statistical technique to test the relationship between the variables studied. SEM was chosen because it is able to test direct and indirect relationships between latent variables (such as brand association, brand image, brand awareness, and perceived quality) simultaneously.

2.2 Research process and metadata collection

The process begins with the identification of a relevant research problem, which can be a question or hypothesis regarding the relationship between brand association, brand image, brand awareness, and perceived quality. This problem must be clear and focused so that the data collected can provide useful insights. Information was collected through an online questionnaire in August 2024, before starting the research, consent was given by the company, and all customers gave consent. To distribute the questionnaire, various platforms, including email and whatsapp, were used to send the linked questionnaire to 150 customers. Data collection lasted for 1 month, during which 150 questionnaires were received. Researchers must select a relevant population (for example, PT XX service users) and determine a representative sample. This sample should include various consumer segments to reflect diverse views. After the data is collected, the next step is processing and analysis. In quantitative research, the analysis techniques used are generally descriptive and inferential statistics.

Table 1: Demographics of customers.

No.	Demographic Factors	Category	Subtotal	Percentage
1	Gender	Male	102	66.7
		Female	48	33.3
2	Jobs	Government	73	50.7
		SOE	39	22.9
		Private	44	26.4
Total			300	100.00

2.3 Data analysis

The data were analyzed using partial least squares-structural equation modeling (PLS-SEM) (Hair, 2022), a powerful statistical technique widely used in various fields to analyze complex relationships among variables. PLS-SEM is particularly advantageous for its ability to handle small sample sizes, non-normal data distributions, and latent variable modeling, making it a top choice for researchers who want to uncover complex patterns and structural dependencies in their data.

3. RESULTS

3.1 Evaluation of the measurement model

Convergent and discriminant validity are required to assess validity. Factor loadings and average variance extracted (AVE) were used to evaluate convergent validity. All constructs had factor loadings of more than 0.7, according to data from Table 2 and Figure 2. In addition, the composite reliability (CA) did not exceed 0.6 and Cronbach's alpha (CR) did not exceed 0.7. Factor loadings higher than 0.70 are of particular concern as they indicate effective capture of about half of the indicator variance and ensure satisfactory item reliability (Hair et al., 2022). Therefore, the four given

variables have explained the latent variables effectively and consistently. The CR level is between 0.70 and 0.90, which is considered satisfactory to good, according to research (Fornell & Larcker, 1981).

In addition to these criteria, convergent validity is reinforced by AVE values that exceed 0.50. According to these values, more than half of the indicator variance is attributable to the latent construct. This increases the robustness of the measurement model. In contrast, discriminant validity can be measured by comparing the AVE value with the squared correlation between constructs. According to the Fornell-Larcker criterion, discriminant validity is established when the AVE of each construct is greater than the highest squared correlation with other constructs. This ensures that the structures are not only distinct from each other but also internally consistent.

In addition, cross-loading analysis, where each item should load most highly on the intended construct, reinforces the strength of discriminant validity. These rigorous assessments collectively confirm that the measurement model is reliable and valid, providing a solid foundation for subsequent structural model evaluation. Thus, the empirical evidence from this study reinforces that the constructs used and their respective indicators are suitable for capturing the theoretical constructs, supporting the overall reliability and validity of the research findings.

Table 2: Convergent validity and reliability.

Variables	Cronbach's alpha	p_a	p_b	AVE
Brand Assoiation	0.803	0.806	0.884	0.718
Brand Awareness	0.615	0.748	0.794	0.582
Brand Image	0.630	0.684	0.797	0.573
Perceived Quality	0.687	0.718	0.825	0.612
<i>Source: PLS-SEM (2024).</i>				

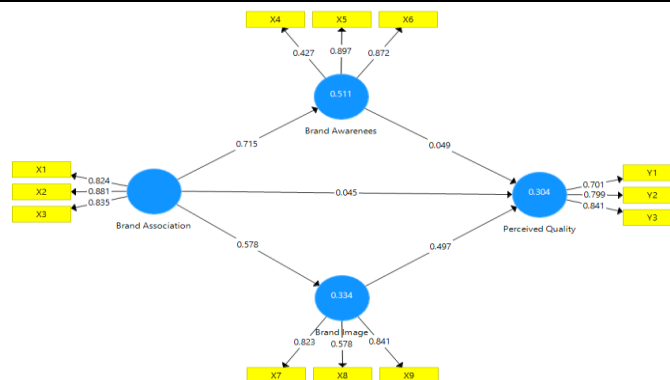


Figure 5: Hypothesis model.

Source: PLS-SEM (2024).

In addition, the measurement model is evaluated for discriminant validity to find out whether distinguishing between the latent variables under study is possible. The discriminant validity of a latent variable indicates how different it is from other latent variables. Assessment of the heterotrait-monotrait ratio (HTMT), model variance inflation factor (VIF), and cross-loading are part of this evaluation. Since the intercorrelation between constructs is less than the square root of the average variance value extracted (AVE), the Fernell-Larker results in Table 3 indicate satisfactory discriminant validity (Hayat et al., 2023).

Table 3: Fornell-Larcker results.

	<u>Brand Assoiation</u>	<u>Brand Awareness</u>	<u>Brand Image</u>	<u>Perceived Quality</u>
Brand Assoiation	0.847			
Brand Awareness	0.715	0.763		
Brand Image	0.578	0.496	0.757	
Perceived Quality	0.367	0.327	0.547	0.783

Source: PLS-SEM (2024).

The number indicating discriminant validity between the two reflective constructs is greater than the number of HTMTs found in Table 4. The Fornell-Larcker results also follow this structure. By cross-loading, the validity of each variable along with its indicators is shown. The outer loadings of each indicator exceed the construct cross-loadings, as indicated by the numbers shown in Table 5. This shows that each indicator is valid and reliable to measure brand association, brand awareness and brand image in improving perceived quality. This conclusion is derived from the PLS-SEM analysis, which tests convergent validity, discriminant validity and validity.

Table 4: HTMT

	Brand Assosiation	Brand Awareness	Brand Image	Perceived Quality
Brand Assosiation				
Brand Awareness	0.962			
Brand Image	0.737	0.792		
Perceived Quality	0.483	0.504	0.831	

Source: PLS-SEM (2024).

In addition, the HTMT ratio analysis shows that the correlation between constructs does not exceed the recommended threshold. This makes the model more unique. This careful validation ensures accurate definition and measurement of research constructs. The PLS-SEM method is particularly suitable for exploratory research and complex models because it combines various reliability and validity tests to provide a thorough assessment.

In addition, our study utilized the Fornell-Larcker criterion and cross-load analysis, which are powerful tools for ensuring discriminant validity. By ensuring that, compared to other indicators, each indicator makes a greater contribution to the corresponding construct, these analyses validate the precision of our measurement tools. These rigorous methods demonstrate the reliability of the structure and enhance the credibility of the results.

Table 5: Cross loading.

	Brand Association	Brand Awareness	Brand Image	Perceived Quality
X1	0,824	0,553	0,495	0,356
X2	0,881	0,645	0,525	0,317
X3	0,835	0,616	0,447	0,258
X4	0,233	0,427	0,384	0,217
X5	0,676	0,897	0,418	0,291
X6	0,617	0,872	0,384	0,253
X7	0,641	0,545	0,823	0,391
X8	0,148	0,104	0,578	0,407
X9	0,406	0,369	0,841	0,473
Y1	0,234	0,210	0,341	0,701
Y2	0,270	0,187	0,401	0,799
Y3	0,342	0,345	0,515	0,841

Source: PLS-SEM (2024).

3.2 Structural model evaluation

Based on Table 6, the NFI is 65.5%, so the hypothetical model fits reasonably well. The R-square shows the extent of the influence of the variables in the structural model. "Brand Awareness" has the highest percentage at 51.1%, "Brand Image" at 33.4%, and "Perceived Quality" at 30.4%. The F-square shows how well the variables fit in the structural model. In addition, the F-square in Table 7 is greater than 0.02, so each variable fits and is accepted.

Table 6: R-square values and model fit.

Variables	R-square	Model Fit	
Brand Awareness	0.511	SRMR	0.106
Brand Image	0.334	Chi-squared	239.634
Perceived Quality	0.304	NFI	0.655

Source: PLS-SEM (2024)

Table 7: F-Square.		
Variables		F-square value
Brand Assosiation□ Brand Awareness		1.043
Brand Assosiation□ Brand Image		0.502
Brand Assosiation□ Perceived Quali		0.001
Brand Awareness□ Perceived Quality		0.002
Brand Image□ Perceived Quality		0.231

Source: PLS-SEM (2024).

Four significant paths were found, as shown in Table 8. The path coefficient shows how much influence one variable has on another. This study shows that the path "Brand Assosiation"->"Brand Awareness" has the highest total influence coefficient, with a value of 0.715. In contrast, "Brand Awareness -> "Perceived Quality" has the lowest total influence coefficient, with a value of 0.049. The factors that directly affect "perceived quality" are the four constructs of "brand association and "brand awareness", "brand association", and "brand image", "brand association" and "perceived quality", "brand image and perceived quality" It shows that "brand association and brand image" have a significant positive direct effect on perceived quality.

Table 8: Total, indirect, and direct impacts.

Path	Total Effect				Indirect Effect			Direct Effect Coefficient
	Value	Coef.	T-stat	P-value	Value	Coef.	T-stat	
Brand Assosiation□ Brand Awareness	0.715	0.715	16.294	0.000				0.715
Brand Assosiation□ Brand Image	0.578	0.578	11.039	0.000				0.578
Brand Assosiation□ Perceived Quality	0.367	0.367	5.364	0.000	0.322	4.03	0.00	0
Brand Awareness□ Perceived Quality	0.049	0.049	0.502	0.616				0.049
Brand Image□ Perceived Quality	0.497	0.497	5.563	0.000				0.497

Source: PLS-SEM (2024).

4. DISCUSSION

The findings presented in this study provide a comprehensive analysis of the validity and reliability of the brand association model, brand awareness and brand image and perceived quality on the structural relationship between the constructs studied (Hair et al., 2022):

4.1 Convergent validity

The study demonstrated strong convergent validity through factor loadings and average variance extracted (AVE). All constructs had factor loadings greater than 0.7, indicating that the constructs effectively captured the variance in their indicators (Fornell & Larcker, 1981; Hair et al., 2022). In addition, the composite reliability (CA) and Cronbach's alpha (CR) surpassed the generally accepted threshold, further confirming the reliability of the measurement model. This strong convergent validity indicates that the variables provided have consistently and effectively explained the latent variables.

4.2 Discriminant validity

Discriminant validity, which is crucial for ensuring the distinctiveness of latent variables, was rigorously evaluated through various methods, including the HTMT ratio, variance inflation factor (VIF) model, and cross-loading. The results show satisfactory discriminant validity, as the intercorrelations between constructs are smaller than the square root of their respective AVE values. In addition, the HTMT ratio was less than 1, indicating reflective discriminant validity. Cross-loading analysis further supports the distinctiveness of each variable, with indicators showing greater validity within their respective constructs compared to others (Hair et al., 2022; Hayat et al., 2023; Henseler et al., 2016).

4.3 Structural model fit

The structural model showed a satisfactory fit, as evidenced by the NFI value (58.8%) and the F-square value. The NFI indicates that the hypothetical model adequately represents the data, while the F-square value indicates that each variable fits the structural model (Hair et al., 2022).

4.4 Significant path and path coefficient

This analysis identified seven significant paths, which explain the structural relationships among the constructs. Path coefficient analysis reveals the degree of influence one variable has on another. The Design path "Brand Assosiation"->"Brand Awarenees" has the highest coefficient, indicating its substantial influence. In contrast, the path "Brand Awareness -> "Perceived Quality" has the lowest coefficient, and is not significant. This highlights the varying influence of different constructs on perceived quality (Hair et al., 2022).

4.5 Implications of brand association, brand awareness, and brand image on perceived quality

In the marketing world, perceived quality refers to how consumers rate the quality of a product or service based on their perceptions (Choedon & Lee, 2020), which is not always the same as the objective quality of the product. Brand association, brand awareness, and brand image are highly influential elements in shaping this perception of quality (Brangsinga & Sukawati, 2019). The following is an explanation of the implications of each on perceived quality:

1. Brand association

Brand association refers to the image or attributes associated with a brand in the minds of consumers or users (Doddy et al. 2020). In the context of PT XX, this brand association can include various elements related to service quality and company reputation.

Implications for perceived quality:

- **Association with reliability and security:** PT XX, as an ICT service provider, is often associated with reliability and security, especially in data center and internet network services. If PT XX manages to build these associations consistently, customers will perceive their service quality as higher than competitors.
- **Association with innovation:** PT XX is also often associated with technological innovation, such as the implementation of the latest technology in cloud computing and big data services. This association can improve quality perceptions as customers tend to view companies that are always innovating as higher quality service providers.
- **Association with customer service:** If PT XX is known for having responsive and solutive customer support, this can improve their quality perception, as customers feel more valued and supported, which creates a positive experience.

2. Brand awareness

Brand awareness measures the extent to which a brand is recognized by consumers and thought of when they need related products or services (Irpan & Ruswanti, 2020). In PT XX's context, brand awareness is important to reach potential customers, be it large companies or MSMEs that need technology solutions.

Implications for perceived quality:

- **Familiarity and Trust:** Better-known brands, such as PT XX, are usually viewed as more credible by consumers. With increased brand awareness, customers will be more likely to believe that the products and services offered by PT XX are of high quality, even though they do not necessarily know in-depth about the technical details of the products.
- **Strength in Market Competition:** In the highly competitive technology industry, strong brand awareness provides an advantage as customers prefer known companies over unknown ones. Therefore, PT XX with high brand awareness will be chosen more often by customers who prioritize quality and trust.

3. Brand image

Brand image reflects how consumers view the brand as a whole (Fenetta & Keni, 2020). PT XX's brand image is strongly influenced by public perception of the company's performance in providing reliable and innovative technology solutions.

Implications for perceived quality:

- **Professional and Trustworthy Image:** PT XX is known as a company that provides B2B (business to business) services with highly professional quality. This image builds a higher perception of quality among large clients, as they tend to prefer service providers that have a serious and classy image in their field.
- **Technology and Innovation Image:** PT XX's image as a leader in technology solutions also shapes the perception that its products and services are of high quality. If customers perceive PT XX as a company that focuses on technological innovation (for example, in terms of implementing cloud solutions or fiber optic networks), then they will perceive these services as superior and of better quality.
- **Excellence in Post-Sales Service:** As a company that offers technology services, a positive image in after-sales service and technical support is essential. If PT XX has a brand image as a company that provides fast and effective solutions in terms of technical support, this will increase the perception of quality from customers.

4. Interaction between brand association, brand awareness, brand image, and perceived quality at PT XX

These three elements interact synergistically in shaping a strong perception of quality in the market. Here is an example of the interaction between these elements:

- **Brand awareness + brand image:** When many people (especially companies) recognize PT XX and associate it with high quality in IT and communication services, more customers will believe in the quality of their services. Brand awareness supported by a positive image as a leading IT solutions provider will strengthen the perception of quality in the market.
- **Brand association + perceived quality:** If PT XX is associated with innovation, security, and reliable services, this will increase perceived quality. For example, if PT XX is perceived as a cloud service provider with excellent data security, consumers will rate the service as higher quality than competitors who do not have similar associations.
- **Brand image + perceived quality:** A strong image of professionalism and innovation will result in better perceived quality. Customers will be more likely to believe that the services provided by PT XX are superior because they view the company as a leader in communications technology and solutions.

5. FINAL CONSIDERATION

This study provides a comprehensive assessment of the validity and reliability of the measurement model, as well as insights into the structural relationships among the constructs under study. The findings confirm strong convergent validity, adequate discriminant validity, and a suitable structural model. In addition, significant paths and coefficients explain the diverse influences on perceived quality. These nuanced relationships shed light on the mechanisms underlying the formation of brand association brand awareness and brand image. The implications of these insights extend to telecommunications company research. For PT Aplikanusa PT XX, brand association, brand awareness, and brand image play a crucial role in shaping perceived quality in the eyes of consumers, be they large corporate clients, MSMEs, or individual consumers in need of technology solutions. By

effectively managing these three elements, PT XX can improve the perceived quality of its products and services, strengthen its competitive position in the market, and increase customer loyalty. Focusing on increasing brand awareness, strengthening brand image as a leader in technological innovation, and managing positive brand associations can be an effective strategy in strengthening quality perceptions in the market.

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