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Analyzing Laptop Brand Positioning in Indonesia: A Perceptual Mapping Approach

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ABSTRACT

The rapid growth of Indonesia's laptop market has intensified competition among brands like ASUS, Lenovo, Acer, HP, and Axioo, necessitating effective positioning strategies to capture consumer preferences. This study aims to identify key attributes influencing consumer perceptions, analyze the positioning of these five laptop brands, and propose strategies to enhance their competitiveness. Using discriminant analysis and perceptual mapping, data were collected from 150 respondents via online surveys, focusing on attributes such as price, performance, design, screen quality, battery life, weight, and service center availability. Findings reveal that screen quality (dimension one, -0.83) and performance (dimension two, 0.873) are the most critical attributes. ASUS emerges as the market leader, excelling in screen quality, performance, service center, and weight. At the same time, Lenovo leads in price and battery life, Acer in performance, and Axioo and HP in screen quality and weight. Recommendations include ASUS improving design and battery life, Axioo enhancing performance and service centers, Lenovo upgrading design and performance, Acer addressing price and battery life, and HP focusing on performance and service accessibility. This research contributes to marketing literature on brand positioning and offers managerial insights for strengthening brand competitiveness in Indonesia's dynamic laptop market.

Keywords: Brand Positioning, Consumer Perception, Laptop Market, Perceptual Mapping, Competitive Strategy.

I. Introduction

Indonesia's laptop market has experienced rapid growth, driven by increasing demand from students, professionals, and content creators, as well as technological advancements and expanding internet penetration. This competitive landscape sees brands like ASUS, Lenovo, Acer, HP, and Axioo vying for consumer preference through distinct positioning strategies. Market data from 2023 and 2024 show ASUS leading with a 23.6% share, followed by Lenovo (22.2%) and Acer (20%), reflecting dynamic shifts in consumer preferences (DataIndonesia.id, 2024). However, limited research comprehensively analyzes how consumer perceptions of attributes such as price, performance, design, and screen quality influence brand positioning in Indonesia. This gap hinders brands' ability to tailor effective strategies for competitive advantage. This study addresses this gap by identifying key attributes influencing consumer choices, mapping the positions of these five brands, and proposing targeted positioning strategies. Using discriminant analysis and perceptual mapping, the research examines consumer perceptions to offer theoretical insights into brand positioning



and practical recommendations for enhancing market competitiveness. By addressing these objectives, the study contributes to the marketing literature and supports industry efforts to align with the evolving needs of consumers in Indonesia's dynamic laptop market. The increasing reliance on laptops for education, remote work, and creative pursuits has intensified competition, requiring brands to differentiate themselves through attributes that resonate with diverse consumer segments. This study employs a consumer-centric approach to explore how perceptions of key attributes—such as price, performance, design, screen quality, battery life, weight, and service center availability—shape brand positioning in Indonesia's laptop market. By leveraging discriminant analysis and perceptual mapping, the research not only identifies the relative importance of these attributes but also visualizes the competitive landscape, enabling a clearer understanding of each brand's strengths and weaknesses. The findings aim to bridge the gap between theoretical frameworks, such as Kotler's positioning theory, and practical applications, offering brands actionable insights to refine their marketing strategies. Ultimately, this study aims to empower industry stakeholders with data-driven recommendations that enhance brand loyalty and market share, while contributing to the broader discourse on consumer behavior in technology-driven markets.

Furthermore, the study's focus on a student-centric sample underscores the importance of understanding the preferences of Indonesia's tech-savvy youth, a key demographic driving laptop market growth. By examining how attributes such as screen quality and performance influence purchasing decisions, this research offers a nuanced perspective on brand differentiation in a crowded market. The use of discriminant analysis ensures a robust statistical foundation for identifying attribute significance, while perceptual mapping offers a visual tool for stakeholders to assess competitive positioning. These methodologies enable brands to pinpoint gaps in their offerings and align their strategies with consumer expectations. Additionally, the study's findings have broader implications for global laptop brands seeking to penetrate emerging markets, highlighting the need to strike a balance between technological innovation and affordability and accessibility. Future research could expand on these insights by incorporating professional and rural consumer segments to capture a more comprehensive view of Indonesia's diverse laptop market, further refining strategies for sustained competitive advantage. The rapid evolution of Indonesia's laptop market, fueled by technological advancements and increasing digital adoption, underscores the urgency for brands to adapt their positioning strategies to meet diverse consumer needs. This study's exploration of consumer perceptions through discriminant analysis and perceptual mapping provides a nuanced understanding of how attributes such as price, performance, and screen quality influence brand preference. By focusing on a sample of 150 university students, the research captures the priorities of a demographic that is both highly engaged with technology and influential in shaping market trends. The findings provide a roadmap for brands to refine their value propositions, ensuring they align with the expectations of this dynamic consumer base while addressing gaps in their existing positioning strategies.

Moreover, the study's emphasis on Kotler's positioning theory highlights the importance of creating a distinct brand image through attribute-based differentiation. The identification of screen quality and performance as primary drivers of consumer preference aligns with global trends toward premium, user-centric devices, particularly in emerging markets like Indonesia. Perceptual mapping not only visualizes the competitive landscape but also reveals opportunities for brands to strengthen their market presence by addressing weaker attributes, such as design or service accessibility. These insights are crucial for brands like ASUS, Lenovo, Acer, HP, and Axioo to develop targeted marketing campaigns that foster consumer trust and loyalty in a highly competitive environment. Looking ahead, the study's findings pave the way for further exploration of how external factors, such as economic conditions or technological disruptions, may influence consumer perceptions in Indonesia's laptop market. By proposing strategies tailored to each brand's strengths and weaknesses, this research equips industry stakeholders with actionable recommendations to navigate market challenges effectively. For instance, brands could invest in localized marketing initiatives or innovative service models to address consumer pain points, such as service center availability. Future studies could build on this foundation by integrating qualitative insights or exploring emerging attributes, such as sustainability

and AI-driven features, to ensure brands remain agile in responding to evolving consumer demands and maintain a competitive edge in Indonesia's vibrant laptop market.

II. Literature Review and Hypothesis Development

2.1. Positioning and Consumer Perception

Brand positioning is a strategic marketing process that establishes a distinct image in consumers' minds, differentiating a brand from its competitors (Kotler & Keller, 2016). Effective positioning leverages attributes like price, performance, and design to align with consumer needs (Schiffman & Wisenblit, 2019). Recent studies highlight the importance of consumer perceptions in technology markets. For instance, Kosasih et al. (2020) found Acer's positioning to be strong among students due to affordability but weaker in terms of user suitability, suggesting gaps in attribute-based positioning research in Indonesia's laptop market. Similarly, Pramitasari (2021) mapped laptop brand positions in Jember, indicating performance and design as key differentiators but lacking a national perspective. These studies highlight the importance of examining how attributes influence brand positioning in Indonesia's dynamic market. The significance of brand positioning in the laptop market extends beyond mere differentiation, as it shapes consumer perceptions and influences purchasing decisions in a highly competitive environment. Building on Kotler and Keller's (2016) framework, effective positioning requires brands to strategically emphasize attributes that resonate with target audiences, such as students and professionals, who prioritize distinct features based on their usage contexts. The dynamic nature of Indonesia's laptop market, driven by rapid technological advancements and increasing digital adoption, amplifies the need for brands to continuously adapt their positioning strategies to align with evolving consumer expectations. Prior studies, such as Kosasih et al. (2020), highlight how affordability can position brands like Acer favorably among price-sensitive segments. However, they also reveal deficiencies in addressing user-specific needs, underscoring the complexity of consumer preferences in this market.

Furthermore, consumer perceptions in technology markets are shaped by a combination of tangible and intangible attributes, as noted by Schiffman and Wisenblit (2019). Attributes like performance and design, identified by Pramitasari (2021) as key differentiators, play a pivotal role in creating a compelling brand image, particularly in localized contexts like Jember. However, the lack of a comprehensive national perspective in existing research limits the generalizability of these findings, necessitating a broader examination of how attributes influence perceptions across diverse Indonesian demographics. This study addresses this gap by analyzing consumer perceptions of multiple attributes—price, performance, design, screen quality, battery life, weight, and service center availability—to provide a holistic understanding of brand positioning in Indonesia's laptop market. By integrating insights from prior research, this study adopts a consumer-centric approach to explore how these attributes collectively shape brand perceptions and competitive positioning. The focus on a student-heavy sample aligns with the growing influence of tech-savvy youth in driving market trends, as they prioritize attributes that enhance functionality and user experience. Drawing on theoretical frameworks such as Kotler's positioning theory, this research aims to contribute to the marketing literature by providing empirical evidence on the interplay of attributes in an emerging market context. Additionally, it aims to provide actionable insights for brands to refine their strategies, ensuring they address both the functional and emotional aspects of consumer preferences, thereby strengthening their market presence in Indonesia's rapidly evolving laptop industry.

2.2. Key Attributes Influencing Laptop Choice

Price significantly affects consumer decisions, with affordability and value perception driving preferences (Habibah & Sumiati, 2022). Screen quality, including resolution and panel type, enhances user experience, particularly for multimedia and professional tasks (Nam et al., 2023). Performance, determined by

processor and RAM, is critical for gamers and professionals (Ghosh, 2022). Service center availability and battery life further influence loyalty and satisfaction (Zeithaml et al., 2020). However, existing research lacks a comprehensive analysis of the relative importance of these attributes in Indonesia, necessitating further investigation. Selecting a laptop is a multifaceted decision influenced by a range of attributes that cater to both practical and aspirational consumer needs in Indonesia's competitive market. Price, as highlighted by Habibah and Sumiati (2022), remains a cornerstone of consumer decision-making, particularly for price-sensitive segments, such as students, who prioritize affordability without compromising perceived value. Beyond price, screen quality encompasses factors such as resolution, color accuracy, and the type of panel used. It has emerged as a critical determinant of user satisfaction, particularly for tasks such as content creation and multimedia consumption (Nam et al., 2023). This attribute's growing importance reflects the increasing demand for visually immersive experiences in both academic and professional settings.

Performance, driven by components such as processors and RAM, is another pivotal attribute, particularly for consumer segments like gamers and professionals who require robust computing power (Ghosh, 2022). This aligns with the trend toward high-performance devices capable of handling resource-intensive applications, further intensifying competition among brands to deliver superior hardware specifications. Additionally, service center availability and battery life play significant roles in fostering consumer trust and satisfaction, as emphasized by Zeithaml et al. (2020). Accessible after-sales support and extended battery life address practical concerns, enhancing brand loyalty in a market where reliability is paramount. However, the relative weight of these attributes in shaping consumer preferences in Indonesia remains underexplored, highlighting a critical gap in the literature. This study aims to address this gap by systematically examining the interplay between price, screen quality, performance, battery life, service center availability, weight, and design in influencing laptop brand preferences. By focusing on a student-centric sample, the research captures the priorities of a key demographic driving market growth, while also considering broader implications for diverse consumer segments. The findings aim to provide a comprehensive framework for understanding attribute importance, enabling brands to tailor their offerings to meet the specific needs of their consumers. This approach not only contributes to the academic discourse on consumer behavior in technology markets but also offers practical insights for brands to optimize their positioning strategies in Indonesia's dynamic and rapidly evolving laptop market.

2.3. Theoretical Framework

This study adopts Kotler's positioning theory, emphasizing differentiation through relevant attributes to create a unique brand image. The framework assumes consumers evaluate laptop brands based on perceived value across multiple dimensions, guiding the analysis of brand positions via perceptual mapping. Kotler's positioning theory provides a robust foundation for this study, emphasizing the strategic importance of crafting a distinct brand image through differentiation based on consumer-relevant attributes (Kotler & Keller, 2016). This framework posits that consumers assess laptop brands by weighing multiple dimensions—such as price, performance, screen quality, and service accessibility—against their needs and preferences, ultimately shaping their perceptions and purchase decisions. By applying this theory, the study aims to examine how these attributes contribute to the competitive positioning of brands such as ASUS, Lenovo, Acer, HP, and Axioo in Indonesia's dynamic laptop market. The use of perceptual mapping as an analytical tool further enhances this approach, offering a visual representation of brand positions based on consumer perceptions, which facilitates a clearer understanding of market dynamics.

The theoretical framework also integrates insights from consumer behavior theories, particularly those emphasizing perceived value as a driver of brand preference (Schiffman & Wisenblit, 2019). This perspective underscores the multidimensional nature of consumer evaluations, where both functional attributes (e.g., performance and battery life) and emotional factors (e.g., design and brand trust) play critical roles. In the context of Indonesia's laptop market, where diverse consumer segments prioritize different attributes, this framework enables a nuanced exploration of how brands can align their offerings with specific

consumer expectations. By anchoring the analysis in Kotler's theory, the study ensures a structured approach to identifying key differentiators, providing a foundation for both theoretical contributions and practical recommendations. This study extends Kotler's framework by applying it to an emerging market context, where technological advancements and shifting consumer priorities amplify the need for precise positioning strategies. The focus on perceptual mapping not only operationalizes the theory but also bridges the gap between abstract consumer perceptions and actionable market insights. By examining how attributes shape brand positions, the research aims to contribute to marketing literature by offering empirical evidence on effective differentiation in technology markets. Furthermore, it provides brands with a strategic roadmap to enhance their competitive edge, ensuring alignment with the evolving demands of Indonesia's tech-savvy consumers.

2.4. Hypothesis Development

Based on the literature, the following hypothesis is proposed: Screen quality significantly influences consumer preferences for laptop brands in Indonesia, as high-quality displays enhance the user experience (Nam et al., 2023). Performance is a stronger predictor of brand positioning than price, given its importance for diverse consumer segments (Ghosh, 2022). Adequate service center availability enhances brand loyalty, as accessibility drives consumer trust (Zeithaml et al., 2020). These hypotheses align with the study's aim to identify key attributes, map brand positions, and propose competitive strategies, contributing to both marketing theory and practice. The development of hypotheses in this study is grounded in a synthesis of existing literature, which highlights the pivotal role of specific attributes in shaping consumer preferences and brand positioning within Indonesia's competitive laptop market. Building on Kotler's positioning theory (Kotler & Keller, 2016), the hypotheses focus on attributes that are both theoretically significant and practically relevant to consumer decision-making. By targeting screen quality, performance, and service center availability, the proposed hypotheses aim to test the relative influence of these attributes on brand preference, addressing gaps in prior research that lack a comprehensive national perspective (e.g., Kosasih et al., 2020; Pramitasari, 2021). This approach ensures alignment with the study's objectives of identifying key drivers of consumer choice, mapping brand positions, and offering strategic recommendations for enhancing market competitiveness. The first hypothesis (H1) posits that screen quality has a significant influence on consumer preferences, as high-quality displays are increasingly crucial for enhancing user experience across academic, professional, and multimedia tasks (Nam et al., 2023). This is particularly relevant in Indonesia, where tech-savvy youth prioritize visual clarity for both functional and entertainment purposes.

The second hypothesis (H2) posits that performance, driven by processor power and RAM, surpasses price as a predictor of brand positioning, underscoring its significance for diverse segments, such as gamers and professionals (Ghosh, 2022). This hypothesis tests the extent to which technical superiority drives competitive advantage in a market where affordability remains a key concern. The third hypothesis (H3) proposes that adequate service center availability fosters brand loyalty by enhancing consumer trust and satisfaction, a factor emphasized by Zeithaml et al. (2020) as critical in technology markets where after-sales support is a key differentiator. These hypotheses collectively provide a framework for empirically validating the interplay of functional and service-related attributes in shaping brand perceptions. By leveraging discriminant analysis and perceptual mapping, the study tests these hypotheses to uncover actionable insights for brands like ASUS, Lenovo, Acer, HP, and Axioo. The findings are expected to contribute to marketing theory by extending the application of positioning theory to an emerging market context, while also offering practical strategies for brands to strengthen their market presence. This dual contribution ensures that the research not only advances academic understanding of consumer behavior but also equips industry stakeholders with data-driven tools to navigate Indonesia's rapidly evolving laptop market.

III. Research Method

3.1. Research Design

This study employs a descriptive research design to analyze the positioning of five laptop brands (ASUS, Lenovo, Acer, HP, Axioo) in Indonesia, using discriminant analysis and perceptual mapping to map consumer perceptions. The design aligns with Kotler's positioning theory, which emphasizes attribute-based differentiation (Kotler & Keller, 2016). The study was conducted from January to March 2025 in Bogor, targeting students as primary laptop users. The descriptive research design adopted in this study provides a structured approach to capturing consumer perceptions of laptop brand positioning in Indonesia, ensuring a robust framework for analyzing attribute-based differentiation. By focusing on five prominent brands—ASUS, Lenovo, Acer, HP, and Axioo—the study leverages discriminant analysis to identify the attributes that most significantly influence consumer preferences. At the same time, perceptual mapping visually represents their competitive positions. This methodology, rooted in Kotler's positioning theory (Kotler & Keller, 2016), enables a systematic exploration of how attributes such as price, performance, screen quality, and service accessibility influence brand perceptions among students, a key demographic driving laptop demand in Indonesia. Conducting the study in Bogor from January to March 2025 ensures a focused yet relevant context, as the region's student population reflects the tech-savvy youth segment critical to the laptop market. The choice of a descriptive design is particularly suited to this research, as it enables a detailed examination of consumer perceptions without manipulating variables, providing a snapshot of current market dynamics.

Discriminant analysis facilitates the identification of attributes that distinguish one brand from another, offering statistical rigor to the analysis of consumer preferences. Meanwhile, perceptual mapping complements this by translating complex data into an accessible visual format, allowing stakeholders to quickly grasp competitive positioning. By targeting students, the study captures insights from a demographic known for its heavy reliance on laptops for academic and personal use, ensuring relevance to market trends. This design also sets the stage for generalizable findings, with the potential to inform broader marketing strategies for brands operating in Indonesia's competitive laptop market. Furthermore, the study's alignment with Kotler's positioning theory ensures that the research remains theoretically grounded while addressing the practical needs of the industry. The focus on Bogor as a research setting leverages its diverse student population, which mirrors the broader Indonesian youth market, making it an ideal microcosm for studying consumer behavior. The three-month timeframe (January to March 2025) allowed for comprehensive data collection, capturing seasonal variations in student purchasing behavior, such as those influenced by academic cycles. By integrating rigorous statistical methods with a consumer-centric focus, this research design not only contributes to the academic understanding of brand positioning but also provides actionable insights for brands to refine their marketing strategies, enhance competitive differentiation, and strengthen their foothold in Indonesia's rapidly evolving laptop market.

3.2. Participants and Sampling

A purposive sampling method was employed to select 150 university students aged 17-27, chosen for their active use of laptops and their representation of Indonesia's tech-savvy youth. Participants were recruited through university social media groups, and informed consent was obtained to ensure ethical compliance. The sample size was determined based on statistical power analysis for discriminant analysis, ensuring adequate representation (Hair et al., 2019). The purposive sampling method employed in this study ensures a targeted selection of 150 university students aged 17-27, a demographic strategically chosen for their frequent laptop use and alignment with Indonesia's tech-savvy youth, a key driver of the laptop market. By recruiting participants through university social media groups, the study leverages accessible and relevant platforms to engage this digitally active population, enhancing response quality and relevance. Informed consent was obtained meticulously to adhere to ethical research standards, thereby fostering trust and

transparency with participants. The sample size of 150 was determined through statistical power analysis, as recommended by Hair et al. (2019), to ensure sufficient statistical robustness for discriminant analysis, thereby enabling reliable identification of attributes influencing brand positioning. This sampling approach is efficient in capturing the perspectives of a demographic that significantly influences market trends, as they rely heavily on laptops for academic, professional, and recreational purposes.

The focus on university students in Bogor provides a concentrated yet representative snapshot of Indonesia's youth, whose preferences for attributes like performance, screen quality, and affordability shape market dynamics. By limiting the age range to 17-27, the study ensures homogeneity in tech familiarity while reflecting the diversity of student needs, from budget-conscious buyers to those prioritizing high-performance devices. The use of social media for recruitment not only streamlined data collection but also aligned with the digital habits of the target group, maximizing participation rates. Moreover, the purposive sampling method enhances the study's ability to generate actionable insights for laptop brands targeting Indonesia's youth market. The sample size, grounded in statistical power analysis, strikes a balance between practical constraints and the need for robust findings, ensuring that the results are both statistically significant and practically relevant. Ethical compliance through informed consent further strengthens the study's credibility, addressing potential concerns about participant autonomy. This approach lays a strong foundation for the subsequent discriminant analysis and perceptual mapping, enabling a precise examination of how consumer perceptions shape brand positioning. Future studies could expand this sampling frame to include non-student or rural populations, thereby broadening the generalizability of the findings and further enriching the understanding of Indonesia's diverse laptop market.

3.3. Data Collection

Data were collected using an online questionnaire created via Google Forms, which was pretested with 20 students to ensure clarity and relevance. The questionnaire measured seven attributes (price, performance, design, screen quality, battery life, weight, and service center) on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Attributes were selected based on prior studies (e.g., Nam et al., 2023) for their influence on consumer preferences. Data anonymity was ensured, and responses were collected over a four-week period, achieving a 92% response rate. The data collection process for this study was designed to generate robust and reliable insights into consumer perceptions of laptop brand positioning in Indonesia. An online questionnaire, administered via Google Forms, was selected for its accessibility and efficiency in reaching the target demographic of tech-savvy university students. The questionnaire was pretested with a pilot group of 20 students to refine question clarity, eliminate ambiguity, and confirm the relevance of the seven selected attributes: price, performance, design, screen quality, battery life, weight, and service center availability. These attributes, informed by prior research such as Nam et al. (2023), were measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), allowing for the precise capture of consumer preferences and perceptions across multiple dimensions.

To ensure data integrity and participant trust, strict measures were implemented to maintain anonymity, protecting respondents' personal information and encouraging honest responses. The data collection period spanned four weeks, from January to February 2025, aligning with academic schedules to maximize participation among the student sample. This strategic timing contributed to an impressive 92% response rate, reflecting the effectiveness of using university social media groups for recruitment and the questionnaire's user-friendly design. The high response rate enhances the reliability of the findings, providing a solid foundation for the subsequent discriminant analysis and perceptual mapping used to analyze brand positioning. The selection of attributes was grounded in their established influence on consumer preferences in technology markets, ensuring alignment with the study's objectives. By leveraging an online platform like Google Forms, the study capitalized on the digital proficiency of the target demographic, facilitating efficient data collection while minimizing logistical barriers. This approach not only streamlined the process but also enabled real-time data monitoring, allowing for the quick identification of any response inconsistencies. The

rigorous pretest phase and high response rate underscore the study's methodological robustness, setting the stage for meaningful insights into how consumer perceptions shape laptop brand positioning in Indonesia's competitive market. Future research could complement this approach with qualitative methods, such as focus groups, to deepen the understanding of attribute preferences and enhance the applicability of findings across diverse consumer segments.

3.4. Data Analysis

Discriminant analysis was conducted using SPSS 26 to identify attributes distinguishing brand positions, with assumptions of normality and homogeneity tested. Perceptual mapping visualizes brand positions based on consumer ratings and preferences. Reliability was assessed using Cronbach's alpha (>0.7), and validity was confirmed through factor analysis. Significance was set at $p < 0.05$.

Table 1. Sample Demographics (N = 150)

Measurement	N	%
Gender		
Male	75	50
Female	75	50
Age (Years)		
17 – 20	90	60
21 – 24	45	30
25 – 27	15	10
Education Level		
Undergraduate	150	100
Note. Sample demographics of the student respondents.		

The data analysis for this study was meticulously designed to provide a robust evaluation of the consumer perceptions that influence laptop brand positioning in Indonesia. Discriminant analysis, performed using SPSS 26, was employed to identify which attributes—price, performance, design, screen quality, battery life, weight, and service center availability—most significantly differentiate the positioning of ASUS, Lenovo, Acer, HP, and Axioo. Prior to analysis, assumptions of normality and homogeneity of variance were rigorously tested to ensure the validity of the results, adhering to statistical best practices (Hair et al., 2019). This approach enabled the identification of key attributes driving consumer preferences, providing a clear statistical basis for understanding brand distinctions in a competitive market. Perceptual mapping was utilized to visually represent the relative positions of the five laptop brands based on consumer ratings, offering an intuitive depiction of their competitive landscape. This visualization, grounded in the discriminant analysis results, enabled a clear interpretation of how brands are perceived across the selected attributes, providing strategic insights for marketers. To ensure the reliability of the questionnaire, Cronbach's alpha was calculated, with values exceeding 0.7 confirming internal consistency across the measured attributes.

Validity was further established through factor analysis, which verified that the selected attributes accurately captured the constructs of interest. A significance threshold of $p < 0.05$ was adopted to determine statistically significant findings, ensuring robust and reliable conclusions. The combination of discriminant analysis and perceptual mapping provides a comprehensive analytical framework, aligning with the study's objective to map brand positions and identify key differentiators. The demographic profile of the 150 respondents, as shown in Table 1, reflects a balanced sample (50% male, 50% female; 60% aged 17–20, 30% aged 21–24, 10% aged 25–27; all undergraduates), ensuring representativeness within the student demographic. This analytical approach not only strengthens the study's methodological rigor but also enhances its practical relevance, offering brands actionable insights to refine their positioning strategies.

Future research could incorporate additional analytical techniques, such as cluster analysis, to explore consumer segmentation further and validate findings across diverse populations in Indonesia's laptop market.

IV. Results and Discussion

4.1. Analysis Result

Discriminant analysis revealed that screen quality (-0.83 , dimension one, $p < 0.01$) and performance (0.873 , dimension two, $p < 0.01$) were the primary attributes shaping consumer perceptions of laptop brands in Indonesia ($N = 150$). ASUS emerged as the market leader, scoring highest in screen quality ($M = 4.5$, $SD = 0.6$), performance ($M = 4.4$, $SD = 0.5$), service center availability ($M = 4.3$, $SD = 0.7$), and weight ($M = 4.2$, $SD = 0.6$). Lenovo led in price ($M=4.1$, $SD=0.8$) and battery life ($M=4.0$, $SD=0.7$), Acer in performance ($M=4.3$, $SD=0.6$), and Axioo and HP in screen quality ($M=4.2$, $SD=0.7$) and weight ($M=4.1$, $SD=0.8$).

Table 2. Attribute Rankings by Brand (N = 150)

Brand	Screen Quality (M)	Performance (M)	Price (M)	Battery Life (M)	Service Center (M)	Weight (M)	Design (M)
ASUS	4.5	4.4	3.8	3.7	4.3	4.2	3.9
Lenovo	3.9	3.8	4.1	4.0	3.6	3.7	3.5
Acer	4.0	4.3	3.9	3.6	4.0	3.8	4.0
HP	4.2	3.7	3.8	3.5	3.5	4.1	3.6
Axioo	4.2	3.6	4.0	3.5	3.4	4.1	3.4

Note. Mean consumer ratings of key attributes across laptop brands.

The discriminant analysis conducted in this study provides critical insights into the attributes driving consumer perceptions of laptop brand positioning in Indonesia, with screen quality (-0.83 , dimension one, $p < 0.01$) and performance (0.873 , dimension two, $p < 0.01$) emerging as the most influential factors among the 150 student respondents. These findings underscore the significant influence of technological attributes on shaping consumer preferences, particularly among tech-savvy youth who prioritize high-resolution displays and robust processing power for both academic and recreational purposes. ASUS's dominance in the market is evident, achieving the highest mean scores in screen quality ($M = 4.5$, $SD = 0.6$), performance ($M = 4.4$, $SD = 0.5$), service center availability ($M = 4.3$, $SD = 0.7$), and weight ($M = 4.2$, $SD = 0.6$), positioning it as the market leader. Lenovo's strength in price ($M=4.1$, $SD=0.8$) and battery life ($M=4.0$, $SD=0.7$) appeals to cost-conscious consumers, while Acer's strong performance score ($M=4.3$, $SD=0.6$) underscores its appeal to users seeking high processing capabilities. Axioo and HP, both scoring well in screen quality ($M = 4.2$, $SD = 0.7$) and weight ($M = 4.1$, $SD = 0.8$), cater to consumers who value portability and visual clarity. The results, as presented in Table 2, offer a clear snapshot of each brand's competitive strengths and weaknesses, providing a foundation for strategic positioning. ASUS's leadership across multiple attributes aligns with its market share dominance (23.6%, DataIndonesia.id, 2024), reflecting its ability to balance premium features with consumer expectations.

Lenovo's focus on affordability and battery life positions it favorably among budget-conscious students, while Acer's emphasis on performance makes it a strong contender for performance-driven segments. However, Axioo and HP's lower scores in performance ($M = 3.6$ and $M = 3.7$, respectively) and service center availability ($M = 3.4$ and $M = 3.5$) suggest areas for improvement to enhance their competitiveness. These findings validate the study's hypotheses, particularly H1 and H2, confirming the significant influence of screen quality and performance on consumer preferences in Indonesia's laptop market. The analysis also highlights the utility of discriminant analysis in identifying key differentiators and perceptual mapping in visualizing brand positions, providing a dual approach that enhances both academic

and practical understanding. The high statistical significance ($p < 0.01$) of the identified attributes ensures confidence in the results, while the balanced demographic profile of the sample (50% male, 50% female; predominantly aged 17–20) strengthens the relevance of findings for the student demographic. However, the focus on students may limit generalizability to other consumer segments, such as professionals or rural users. Future research could expand the sample to include these groups and incorporate additional attributes, such as sustainability or software ecosystem compatibility, to provide a more comprehensive view of brand positioning dynamics in Indonesia's evolving laptop market.

4.2. Discussion

The findings confirm that screen quality and performance are pivotal in shaping consumer preferences, aligning with Nam et al. (2023), who emphasized the importance of display quality for user experience. ASUS's leadership in these attributes reflects its focus on high-resolution displays and robust processors, consistent with Pramitasari's (2021) findings on performance-driven positioning. However, Lenovo's strength in price and battery life aligns with Kosasih et al. (2020), suggesting affordability as a key differentiator for entry-level markets. These results support Kotler's positioning theory (Kotler & Keller, 2016), as brands differentiate through attribute-based value perceptions, though no contradictions with prior theories were identified. The student-heavy sample (17–27 years) may bias results toward tech-savvy preferences, potentially underrepresenting professional users. Industry-wide, the emphasis on screen quality and performance signals a trend toward premium, user-centric devices. Future research should incorporate mixed-methods approaches to validate findings across diverse demographics. The findings of this study offer a nuanced understanding of how screen quality and performance impact consumer preferences in Indonesia's laptop market, aligning with Nam et al. (2023), who emphasize the crucial role of high-quality displays in enhancing user experience across various tasks, including academic, professional, and multimedia applications. ASUS's dominance in these attributes, driven by its focus on high-resolution screens and powerful processors, aligns with Pramitasari's (2021) observation of performance as a key differentiator, reinforcing its market leadership (23.6% market share, DataIndonesia.id, 2024). Lenovo's competitive edge in price and battery life, as highlighted by Kosasih et al. (2020), positions it as a preferred choice for budget-conscious consumers, particularly students seeking value-driven options. These results validate Kotler's positioning theory (Kotler & Keller, 2016), which emphasizes attribute-based differentiation as a cornerstone of brand positioning, with each brand leveraging specific strengths to carve out distinct market niches.

The study's reliance on a student-heavy sample (aged 17–27) ensures relevance to Indonesia's tech-savvy youth, a demographic pivotal to market growth due to their reliance on laptops for education and entertainment. However, this focus may introduce bias, potentially underrepresenting the preferences of professional or older consumer segments who prioritize different attributes, such as durability or enterprise-level support. The absence of contradictions with prior theories strengthens the study's alignment with established marketing frameworks, but it also highlights the need for broader demographic inclusion to enhance generalizability and validity. The industry's shift toward premium, user-centric devices, as evidenced by the prominence of screen quality and performance, suggests that brands must continue innovating in these areas to maintain competitiveness in a market increasingly driven by technological sophistication. These findings offer actionable insights for brands to refine their positioning strategies. For instance, ASUS could further solidify its leadership by addressing weaker attributes, such as design and battery life. At the same time, Lenovo and Acer could enhance performance and screen quality to appeal to segments beyond price-sensitive buyers. Axioo and HP, lagging in service center availability, should prioritize improving after-sales support to boost consumer trust. The study's emphasis on perceptual mapping as a tool for visualizing brand positions provides a practical framework for marketers to identify competitive gaps and opportunities. To build on these insights, future research should adopt mixed-methods approaches, combining quantitative data with qualitative insights from focus groups or interviews, to capture a broader range of consumer perspectives. Additionally, exploring emerging attributes such as sustainability or AI-driven features could

further illuminate evolving consumer priorities, ensuring that brands remain agile in Indonesia's dynamic and competitive laptop market.

V. Conclusion

This study provides a comprehensive analysis of laptop brand positioning in Indonesia, utilizing discriminant analysis and perceptual mapping to evaluate consumer perceptions of ASUS, Lenovo, Acer, HP, and Axioo among 150 student respondents. The findings identify screen quality ($M = 4.2$, $SD = 0.7$, $p < 0.01$) and performance ($M = 4.1$, $SD = 0.6$, $p < 0.01$) as the primary attributes shaping consumer preferences, confirming hypotheses H1 and H2. ASUS leads in screen quality, performance, service center availability, and weight, while Lenovo excels in price and battery life. Acer excels in performance, and Axioo and HP excel in screen quality and weight. These results address the research objectives of identifying key attributes, mapping brand positions, and proposing competitive strategies, offering valuable insights into Indonesia's dynamic laptop market. The study's findings highlight the critical interplay of technological and service-oriented attributes in shaping consumer preferences, offering a clear roadmap for brands to strengthen their market presence in Indonesia. By identifying screen quality and performance as the primary drivers, the research underscores the growing consumer demand for high-quality, user-centric devices, particularly among tech-savvy students who represent a significant market segment. The use of discriminant analysis and perceptual mapping not only provides statistical rigor but also delivers a practical visualization of competitive dynamics, enabling brands to pinpoint strategic opportunities for differentiation. This dual-method approach enhances the study's contribution to both academic research and industry practice, bridging theoretical insights with actionable recommendations.

Moreover, the results reflect the evolving nature of Indonesia's laptop market, where rapid digital adoption and increasing technological literacy among youth amplify the importance of aligning brand offerings with consumer expectations. ASUS's leadership across multiple attributes positions it as a benchmark for competitors, while Lenovo's focus on affordability and battery life caters effectively to price-sensitive segments. Acer, Axioo, and HP, however, must address identified weaknesses to capture broader market share. The study's emphasis on a student sample provides targeted insights but also suggests the need for broader demographic inclusion in future research to ensure comprehensive market coverage. By addressing these dynamics, the research equips brands with the tools to navigate competitive challenges and capitalize on emerging trends. Looking forward, the study's implications extend beyond immediate strategic adjustments, encouraging brands to anticipate future shifts in consumer priorities, such as sustainability or AI-driven functionalities. The robust methodological framework, grounded in Kotler's positioning theory, offers a scalable model for analyzing brand positioning in other technology-driven markets. Future research could build on this by incorporating longitudinal data to track evolving preferences or exploring rural consumer segments to enhance generalizability. Ultimately, this study catalyzes brands to refine their positioning strategies, fostering greater alignment with Indonesia's diverse and rapidly evolving consumer base while contributing to the global discourse on effective brand differentiation in emerging markets.

Theoretical Implications: The findings reinforce Kotler's positioning theory (Kotler & Keller, 2016), demonstrating that attribute-based differentiation drives brand perceptions in competitive markets. By extending this theory to Indonesia's laptop market, the study highlights the critical role of technological attributes, such as screen quality and performance, in shaping consumer preferences in emerging markets. This contribution to marketing literature provides empirical evidence on how consumer perceptions of specific attributes influence brand positioning, addressing a gap in prior studies that lacked a national perspective (e.g., Kosasih et al., 2020; Pramitasari, 2021). The research also underscores the applicability of perceptual mapping in visualizing brand positions, offering a robust framework for future studies in technology markets. The study's findings further enrich Kotler's positioning theory by demonstrating its relevance in the context of Indonesia's rapidly evolving laptop market, where technological attributes like screen quality and performance are pivotal in shaping consumer perceptions. By applying this framework to

an emerging market, the research highlights how attribute-based differentiation can address the unique demands of tech-savvy consumers, particularly students, who prioritize functionality and user experience. This extension of the theory bridges a critical gap in the marketing literature, as prior studies, such as Kosasih et al. (2020) and Prमितasari (2021), were limited to localized contexts and lacked a comprehensive national perspective.

The empirical validation of screen quality and performance as key differentiators provides a deeper understanding of consumer behavior in technology-driven markets, offering a foundation for further theoretical exploration. Additionally, the use of perceptual mapping as a tool to visualize brand positions enhances the theoretical utility of the study, providing a replicable methodology for analyzing competitive dynamics in other product categories or markets. This approach not only strengthens the applicability of Kotler's framework but also underscores its flexibility in capturing multidimensional consumer perceptions. The findings suggest that in emerging markets, where digital adoption is accelerating, technological attributes play a disproportionately significant role in brand differentiation compared to traditional factors, such as price. Future research could extend this framework by integrating additional theoretical lenses, such as consumer psychology or behavioral economics, to explore how emotional and cognitive factors further influence brand preferences, thereby deepening the theoretical discourse on positioning in dynamic market environments.

Managerial Implications: For industry practitioners, the study offers actionable strategies to enhance brand competitiveness. ASUS should prioritize improving design and battery life while leveraging online support to strengthen consumer loyalty. Lenovo can enhance performance and design to appeal beyond price-sensitive segments, while Acer should focus on affordability and battery life to better target students. Axioo and HP need to improve performance and service center accessibility to bolster their market positions. These recommendations align with the industry trend toward premium, user-centric devices, enabling brands to align their offerings with evolving consumer needs. However, the student-heavy sample may limit generalizability, suggesting that brands validate these strategies across diverse demographics to ensure broader market relevance. Future research should incorporate mixed-methods approaches and explore additional attributes, such as sustainability, to further refine positioning strategies in Indonesia's competitive laptop market. The managerial implications of this study provide a strategic blueprint for laptop brands to optimize their positioning in Indonesia's competitive market, aligning with the identified consumer preferences for premium, user-centric devices. For ASUS, maintaining its market leadership requires addressing weaker attributes, such as design and battery life, potentially through innovative aesthetics and advanced battery technologies, while enhancing online support channels to foster stronger consumer loyalty. Lenovo, with its strength in affordability, should invest in upgrading performance and design to broaden its appeal to performance-driven segments, such as gamers and professionals, thereby reducing reliance on price-sensitive consumers. Acer can solidify its position by further emphasizing affordability and improving battery life, tailoring offerings to students who prioritize value and portability for academic tasks.

For Axioo and HP, addressing performance and service center accessibility deficiencies is crucial to enhancing their competitive position. Investments in higher-performance hardware and expanding service center networks, particularly in underserved regions, could enhance consumer trust and satisfaction. These tailored strategies reflect the broader industry shift toward devices that combine cutting-edge technology with user-focused features, ensuring brands remain relevant in a market driven by technological sophistication. However, the student-centric sample underscores the need for brands to validate these recommendations across diverse demographics, such as professionals or rural consumers, to ensure broader market applicability and avoid overgeneralization. Beyond immediate strategies, the study encourages brands to anticipate emerging consumer trends, such as demand for sustainable materials or AI-driven functionalities, to stay ahead of market shifts. By leveraging insights from perceptual mapping, marketers can continuously monitor their brand's position relative to competitors, enabling them to make agile adjustments to their marketing campaigns. Collaborative efforts, such as partnerships with local universities or tech influencers, could further amplify brand visibility among Indonesia's youth. Future research should employ

mixed-methods approaches, integrating qualitative insights from focus groups or surveys of non-student segments, to refine these strategies and explore additional attributes, such as eco-friendliness, ensuring brands sustain a competitive edge in Indonesia's dynamic and rapidly evolving laptop market.

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