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Consumer Perceptions of Electric Motorcycle Adoption Factors in Indonesia: A Descriptive Analysis Across Income, Gender, and Vehicle Ownership Segments

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Abstract: Indonesia's massive conventional motorcycle (CM) market presents both a challenge and an opportunity for electric motorcycle (EM) adoption. While government subsidies and supportive policies have been introduced, adoption rates remain persistently low, highlighting the need for a deeper understanding of consumer perceptions. This study provides a descriptive portrait of consumer perceptions toward electric motorcycle adoption based on a cross-sectional survey of 786 respondents across major Indonesian cities. Nine constructs were examined: Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Price Value, Habit, Brand Trust, and Purchase Intention. Descriptive statistics and segmentation analyses were conducted across income, gender, and vehicle ownership groups. Findings indicate that Effort Expectancy and Brand Trust were the most favorably rated constructs, while Habit recorded the lowest means, reflecting psychological attachment to conventional motorcycles. Public charging infrastructure availability emerged as the weakest facilitating factor. Income showed the clearest demographic differentiation, with higher-income respondents reporting more positive perceptions across virtually all constructs. Gender differences were minimal, and current EM owners consistently reported more favorable perceptions than non-owners. These findings provide a granular baseline to inform targeted strategies for policymakers, manufacturers, and marketers seeking to accelerate sustainable mobility transition in Indonesia.

Keyword: Electric Motorcycle, Consumer Perception, Descriptive Analysis, Indonesia.

INTRODUCTION

Electric motorcycles (EMs) have emerged as a promising, practical, and affordable pathway to curb greenhouse gas emissions and reduce dependence on fossil fuels in Indonesia, a nation with one of the world's largest conventional motorcycles (CMs) markets

(Awirya et al., 2023)(Yuniarto et al., 2022). CMs dominate Indonesia's transportation landscape, serving as the primary mode of daily mobility for millions due to their affordability, maneuverability in congested urban areas, and suitability for both urban commuting and rural logistics (Aritenang, 2024). With over 100 million units on the road and annual sales frequently exceeding several million, the CM segment plays a central role in the country's mobility ecosystem (Yuniarto et al., 2022).

Despite this massive scale, the transportation sector remains a significant contributor to air pollution and carbon emissions (Atabani et al., 2012). Transitioning to electric motorcycles, therefore, aligns with Indonesia's national climate commitments, including efforts to reduce emissions and improve urban air quality. In response, the Indonesian government has introduced various supportive policies, such as purchase subsidies, tax exemptions, and battery-swapping infrastructure (Pirmana et al., 2023)(Aqidawati et al., 2022). However, adoption rates have remained persistently low. In recent years, Electric motorcycles have indeed captured only a small fraction of total sales in Indonesia, even with Indonesia's extensive motorcycle market (ASIMOLI, 2024).

This slow uptake highlights the need for deeper insights beyond policy incentives alone. Consumer perceptions and attitudes play a critical role in technology adoption, particularly in emerging markets where familiarity with CMs is deeply entrenched. Numerous research on electric motorcycle adoption has largely relied on technology acceptance models to test causal relationships and structural equations. Many studies have applied the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2), Theory of Planned Behavior (TPB), or extensions thereof (Zhang & Chang, 2023)(Nguyen-Phuoc et al., 2024)(Shetty & Rizwana, 2024). These works have identified key influences such as performance expectancy, social factors, environmental concerns, economic benefits, and policy support. While valuable, such studies often prioritize hypothesis testing and model validation over a comprehensive, descriptive mapping of how perceptions are distributed across the population.

The present study offers a detailed descriptive portrait of Indonesian consumers' perceptions toward electric motorcycle adoption. Unlike prior research that primarily examines causal pathways and structural models, this study systematically describes the distribution, central tendencies, variability, and patterns of consumer perceptions across multiple dimensions. This descriptive approach provides foundational insights that can inform more targeted and effective strategies for policymakers, manufacturers, and marketers.

The study examines nine main constructs. Six core constructs are drawn from the UTAUT2 framework: Performance Expectancy (perceived usefulness and benefits of EMs), Effort Expectancy (perceived ease of use), Social Influence (perceptions of social pressure and recommendations), Facilitating Conditions (availability of supporting infrastructure and resources), Hedonic Motivation (enjoyment and pleasure derived from use), Price Value (perceived value for money), and Habit (behavioral attachment to conventional motorcycles) (Venkatesh et al., 2012). One additional construct, Brand Trust (confidence in the reliability and credibility of EM brands), was included for its relevance in the Indonesian market, where brand reputation and after-sales support influence purchasing decisions amid a growing but fragmented local EM industry. The final construct is Purchase Intention toward electric motorcycles.

By adopting a descriptive lens, this research addresses important gaps in literature. Most existing studies focus on intention or early adoption in limited geographic scopes and overlook detailed segmentation of perceptual differences. This study conducts a cross-sectional analysis across major Indonesian cities and prioritizes the systematic characterization of perceptual distributions and variations across key demographic and behavioral segments, such as income level, gender, and ownership of conventional

motorcycles. Such granular profiling yields directly actionable insights for practitioners and policymakers aiming to accelerate sustainable mobility transitions.

This study has two primary objectives: (1) to describe the average scores, distribution patterns, perceptual variation, and key characteristics of each of the nine constructs; and (2) to analyze how these perceptions differ across demographic and behavioral segments. Through this approach, the research contributes a robust baseline understanding that complements existing causal and predictive models, ultimately supporting more nuanced strategies to boost electric motorcycle adoption in Indonesia and similar emerging markets.

METHOD

This study employed a descriptive cross-sectional design using a self-administered online questionnaire developed and validated for research purposes. Each item was measured using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). To ensure the validity and reliability of the research instrument, a pilot test was conducted. The internal consistency of the constructs was evaluated using Cronbach's Alpha. The results indicated that all constructs exceeded the acceptable reliability threshold of 0.70, demonstrating satisfactory internal consistency (Hair et al., 2022). A total of 786 respondents were retained in the final analytical sample after data screening. The sample composition reflected the demographic diversity of the Indonesian urban motorcycle-using population. All analyses were restricted to descriptive statistics and crosstabulation without application of inferential statistical tests or significance thresholds. Construct-level mean scores were computed as the simple average of constituent item means. Item-level response distributions were consolidated into three categories — Disagree (scores 1–2), Neutral (score 3), and Agree (scores 4–5) — to facilitate interpretation of directional response patterns. Segment-level analyses were conducted by computing construct mean scores separately for subgroups defined by monthly income bracket (four levels), gender (male/female), CM ownership (yes/no), and EM ownership (yes/no). Differences between segment means are presented descriptively to characterize the direction and magnitude of perceptual variation. All analyses were performed using IBM SPSS Statistics 26 and Microsoft Excel.

RESULTS

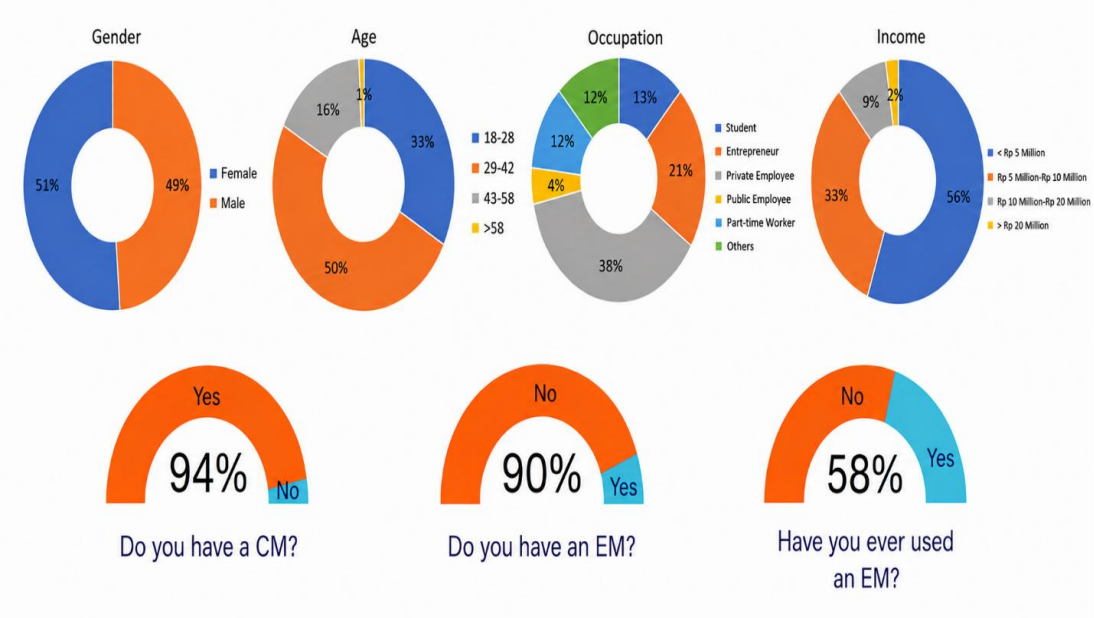
Respondent Profile

Figure 1 presents the demographic profile of the sample across gender, age, occupation, monthly income, and vehicle ownership characteristics. In terms of gender, the sample was nearly evenly split, with female respondents comprising a slight majority (51%, n = 400) and male respondents accounting for 49% (n = 386). Regarding age, the the largest group was respondents aged 29–42 years, representing exactly half of the total sample (50%, n = 393). The 18–28 age bracket constituted the second-largest group (33%, n = 259), followed by respondents aged 43–58 (16%, n = 128). Those over 58 years constituted a minimal proportion (1%, n = 6). This distribution indicates that the sample is predominantly composed of productive-age adults, particularly millennials and younger Generation X.

For occupation, private employees formed the largest group (38%, n = 296), followed by business owners (21%, n = 168), students (13%, n = 100), respondents categorized as 'others' (12%, n = 95), part-time employees (12%, n = 92), and public employees (4%, n = 35). Concerning monthly income, more than half of respondents reported earnings below Rp. 5 million (56%, n = 436), while 33% (n = 258) earned between Rp. 5–10 million. Respondents earning Rp. 10–20 million accounted for 9% (n = 73), and only 2% (n = 19) reported income exceeding Rp. 20 million.

With respect to vehicle ownership, most respondents already owned a conventional motorcycle (94%, n = 741), consistent with the study's focus on the primary EM target market. Electric motorcycle ownership remained very low, with the majority (90%, n = 705)

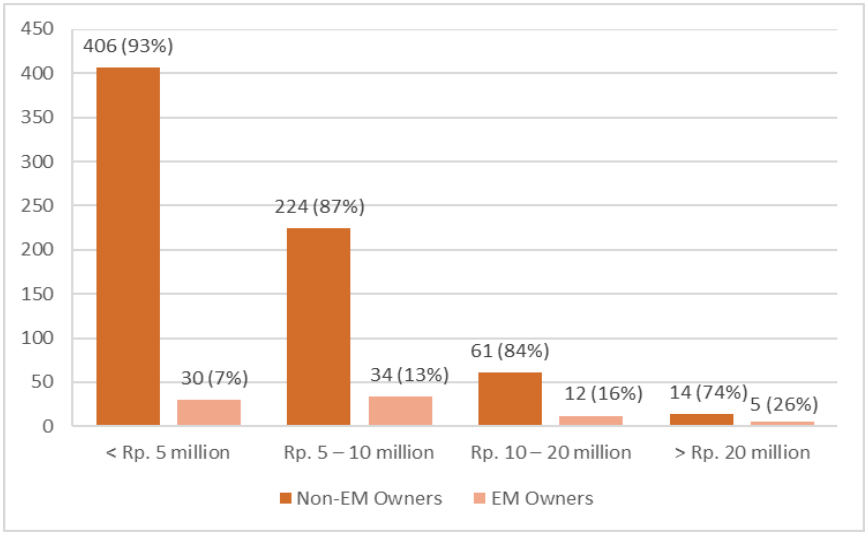
reporting that they do not own an EM and only 10% (n = 81) currently owning one. Regarding experience, most respondents had never used an electric motorcycle, with 58% (n = 453) stating they had never ridden an EM, while 42% (n = 333) reported having prior experience using one.



Source: Author's visualization based on SPSS output

Figure 1. Demographic Profile of Respondents (n = 786)

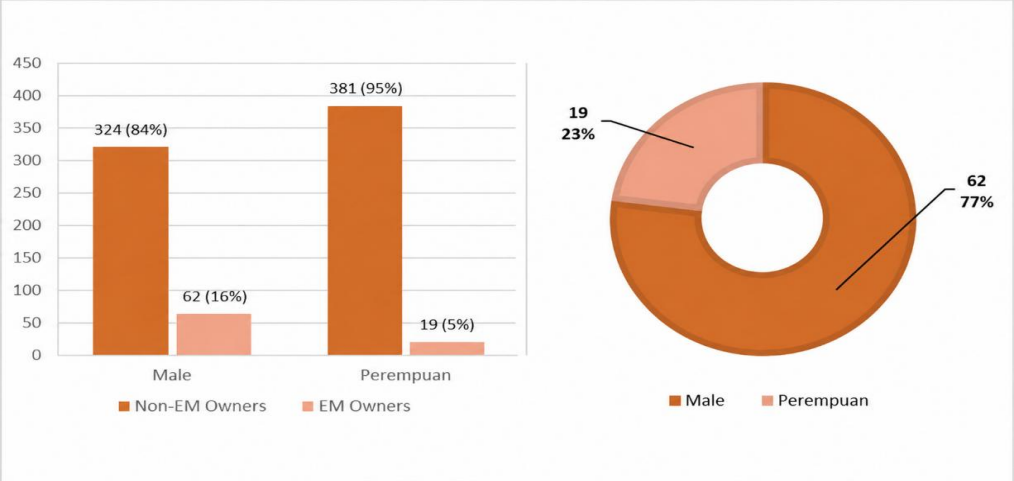
Given the relatively low overall EM ownership rate in the sample, additional descriptive cross-tabulations were conducted to examine how EM ownership varies across key demographic segments. Figure 2 presents the distribution of EM ownership across income groups. A clear pattern emerges: EM ownership rates increase progressively with income level. Among respondents earning below Rp. 5 million, only 6.9% owned an EM. This proportion rose to 13.2% in the Rp. 5-10 million group, 16.4% in the Rp. 10-20 million group and reached 26.3% among the highest income group (> Rp. 20 million). This pattern is consistent with the relatively high upfront purchase cost of electric motorcycles compared to their conventional motorcycles.



Source: Author's visualization based on SPSS output

Figure 2. EM Ownership by Income Group

Figure 3 presents EM ownership distribution by gender. A notable gender disparity is evident: male respondents were considerably more likely to own an EM (16%, n = 62) compared to female respondents (5%, n = 19), while the majority of males did not own one (84%, n = 324), as was similarly the case for females (95%, n = 381). As further illustrated in the doughnut chart, among the 81 current EM owners, approximately three-quarters were male (77%) and one-quarter female (23%)



Source: Author's visualization based on SPSS output

Figure 3. EM Ownership by Gender

Item-Level Perception Distribution

Table 1 presents the distribution of responses across all 35 measurement items, grouped by construct. Responses are consolidated into Disagree (scores 1–2), Neutral (score 3), and Agree (scores 4–5), alongside the item mean on a five-point scale.

Table 1. Item-Level Response Distribution and Mean Scores (n = 786)

Construct	Item	Disagree (%)	Neutral (%)	Agree (%)	Mean
Performance Expectancy	PE1	2.4	17.3	80.3	4.27
	PE2	3.4	27.1	69.5	4.05
	PE3	9.3	33.6	57.1	3.74
	PE4	1.0	7.8	91.2	4.60
	PE5	1.7	14.9	83.5	4.40
		Construct Mean PE			**4.21**
Effort Expectancy (EE)	EE1	1.3	13.1	85.6	4.41
	EE2	1.0	12.6	86.4	4.42
	EE3	0.8	11.7	87.5	4.47
	EE4	0.5	13.5	86.0	4.44
		Construct Mean EE			**4.44**
Social Influence (SI)	SI1	4.6	29.5	65.9	3.98
	SI2	7.0	32.2	60.8	3.86
	SI3	6.5	30.9	62.6	3.88
	SI4	5.6	30.4	64.0	3.91
		Construct Mean SI			**3.91**
Hedonic Motivation	HM1	1.0	17.0	81.9	4.30
	HM2	1.1	18.7	80.2	4.27
	HM3	1.9	22.0	76.1	4.17
		Construct Mean HM			**4.25**
Brand Trust (BT)	BT1	1.9	16.0	82.1	4.36
	BT2	0.5	11.6	87.9	4.51
	BT3	1.1	13.4	85.5	4.46
	BT4	3.2	18.7	78.1	4.25

Table 1. Item-Level Response Distribution and Mean Scores (n = 786) (continued)

Construct	Item	Disagree (%)	Neutral (%)	Agree (%)	Mean
		Construct Mean BT			**4.39**
Habit (HBT)	HBT1	11.8	25.3	62.8	3.80
	HBT2	33.5	34.1	32.4	2.97
	HBT3	41.5	28.6	29.9	2.79
		Construct Mean HBT			**3.19**
Price Value (PV)	PV1	9.0	36.0	55.0	3.72
	PV2	1.5	23.3	75.2	4.15
	PV3	2.0	24.2	73.8	4.15
		Construction Mean PV			**4.01**
Facilitating Conditions	FC1	4.7	28.2	67.0	3.98
	FC2	4.6	27.9	67.6	3.97
	FC3	5.0	24.7	70.4	4.02
	FC4	6.2	30.5	63.2	3.89
	FC5	20.9	33.2	45.9	3.40
		Construct Mean FC			**3.85**
Purchase Intention (PI)	PI1	10.9	33.0	56.1	3.73
	PI2	5.3	25.8	68.8	4.03
	PI3	4.2	24.7	71.1	4.09
	PI4	4.7	24.0	71.2	4.08
		Construct Mean PI			**3.98**

Source: Processed by the author with IBM SPSS Statistics

Effort Expectancy (EE) yielded the highest construct mean overall (4.44), indicating that respondents broadly perceived electric motorcycles as easy to use and operate. All four EE items exceeded a mean of 4.40, with disagreement rates consistently below 1.5%. Brand Trust (BT) was the second-highest rated construct (mean = 4.39), with BT2 — pertaining to trust in EM brand reliability — yielding the highest agreement rate within this construct (87.9%). Hedonic Motivation (HM) also ranked highly (mean = 4.25), and PE4 — capturing the perceived environmental benefit of EM — recorded the highest individual item mean in the entire dataset (4.60), with 91.2% of respondents in agreement.

In contrast, Habit (HBT) produced the lowest construct mean (3.19) and the most heterogeneous response pattern. HBT2 (mean = 2.97) and HBT3 (mean = 2.79) which capture the perceived difficulty and perceived impossibility of switching away from conventional motorcycles — fell below the scale midpoint, with disagreement rates of 33.5% and 41.5% respectively. Facilitating Conditions (FC) revealed a notable internal gap: while FC1–FC4 ranged between 3.89 and 4.02, FC5 — pertaining to public charging infrastructure availability — was the weakest single item in the study (mean = 3.40), with 20.9% of respondents disagreeing. Purchase Intention (PI) recorded a construct mean of 3.98, indicating a reasonably strong purchase intention among respondents.

Table 2. Construct Mean Scores by Income Segment

Construct	< Rp.5M (n=436)	Rp.5–10M (n=258)	Rp.10–20M (n=73)	> Rp.20M (n=19)	Overall (n=786)
PE	4.12	4.32	4.30	4.58	4.21
EE	4.35	4.53	4.60	4.58	4.44
SI	3.81	4.02	4.01	4.29	3.91
HM	4.14	4.37	4.36	4.60	4.25
BT	4.33	4.45	4.49	4.67	4.39
FC	3.73	4.00	4.00	4.19	3.85
PV	3.89	4.12	4.19	4.28	4.01
HBT	3.21	3.27	2.80	3.18	3.19
PI	3.81	4.19	4.16	4.53	3.98

Source: Processed by the author with IBM SPSS Statistics

Consumer Perceptions by Income Segment

Table 2 presents construct mean scores across four income groups. A consistent upward trend is observable: higher-income respondents reported more positive perceptions across virtually all constructs. Purchase Intention showed the steepest income-related rise, from 3.81 among those earning below Rp. 5 million to 4.53 among those earning above Rp. 20 million — a difference of 0.72 points. This pattern aligns with Figure 2 data showing that EM ownership rates increase progressively from 7% in the lowest income group to 26% in the highest.

Facilitating Conditions showed one of the most meaningful income-related gaps: the lowest income group scored 3.73, while all higher income groups scored at or above 4.00. This disparity may reflect differential access to charging solutions, as higher-income respondents are more likely to reside in areas with adequate public infrastructure or to have access to private home charging. Price Value followed a similar income gradient, with the lowest income group rating EM value least favorably (3.89) despite standing to benefit most from long-term fuel and maintenance savings — a finding that suggests the weight of upfront cost dominates long-term economic calculations for lower-income consumers.

Habit (HBT) exhibited a relatively stable pattern across income groups, with scores ranging from 2.80 to 3.27. All groups-maintained values around the scale midpoint, indicating that habitual attachment to conventional motorcycles was generally not dominant across income segments. This pattern suggests that habitual barriers to CM adoption were not substantially influenced by respondents' income levels.

Segment Consumer Perceptions by Gender

Table 3 presents construct mean scores by gender. The overall pattern reveals strong convergence between male and female respondents, with most constructs differing by less than 0.10 points. Performance Expectancy, Social Influence, and Facilitating Conditions yielded virtually identical means across genders (differences of 0.00), indicating that perceptions of EM's functional utility, social norms, and infrastructure are gender-neutral in this sample.

Table 3. Construct Mean Scores by Gender

Construct	Male (n=386)	Female (n=400)	Difference	Overall (n=786)
PE	4.21	4.21	0.00	4.21
EE	4.50	4.38	+0.12	4.44
SI	3.91	3.91	0.00	3.91
HM	4.27	4.23	+0.04	4.25
BT	4.42	4.37	+0.05	4.39
FC	3.85	3.85	0.00	3.85
PV	3.98	4.03	−0.05	4.01
HBT	3.04	3.33	−0.29	3.19
PI	4.03	3.94	+0.09	3.98

Source: Processed by the author with IBM SPSS Statistics

The most notable divergence was observed in Habit (HBT), where female respondents scored notably higher than male respondents (3.33 vs. 3.04, difference = 0.29). Given that HBT measures CM habit strength as a switching barrier, this finding indicates that female respondents perceive their CM habits as a stronger impediment to EM adoption — consistent with their substantially lower EM ownership rate (5%) compared to males (16%). Effort Expectancy was the second-largest differentiator, with males rating it slightly higher (4.50 vs. 4.38), suggesting marginally greater perceived ease of operation among male respondents. Price Value was the only construct where female respondents scored higher than males (4.03

vs. 3.98), indicating slightly greater sensitivity to the long-term economic benefits of EM ownership among women.

Consumer Perceptions by Vehicle Ownership

Table 4 presents construct mean scores based on CM ownership. The most notable difference appears in Habit (HBT), where respondents without a CM reported substantially lower scores (2.90 vs. 3.21). This finding is fully consistent with the meaning of the construct, as respondents without a CM naturally exhibit weaker habitual attachment to conventional motorcycles.

Table 4. Construct Mean Scores by CM Ownership

Construct	No CM (n=45)	Yes CM (n=741)	Difference	Overall (n=786)
PE	4.29	4.21	+0.08	4.21
EE	4.35	4.44	−0.09	4.44
SI	4.01	3.90	+0.11	3.91
HM	4.27	4.25	+0.02	4.25
BT	4.44	4.39	+0.05	4.39
FC	3.84	3.85	−0.01	3.85
PV	4.00	4.01	−0.01	4.01
HBT	2.90	3.21	−0.31	3.19
PI	3.92	3.99	−0.07	3.98

Source: Processed by the author with IBM SPSS Statistics

Table 5 presents construct means by EM ownership — the most theoretically rich segmentation in the study. Across all constructs except HBT, EM owners reported substantially more positive perceptions than non-owners. The largest gaps were observed in Purchase Intention (+0.54), Hedonic Motivation (+0.48), Effort Expectancy (+0.38), and Price Value (+0.38). Conversely, EM owners scored lower on HBT (2.77 vs. 3.24, difference = −0.47), confirming that direct ownership experience substantially weakens residual CM habit lock-in.

Table 5. Construct Mean Scores by EM Ownership

Construct	No EM (n=705)	Yes EM (n=81)	Difference	Overall (n=786)
PE	4.18	4.53	+0.35	4.21
EE	4.40	4.78	+0.38	4.44
SI	3.87	4.21	+0.34	3.91
HM	4.20	4.68	+0.48	4.25
BT	4.37	4.62	+0.25	4.39
FC	3.82	4.10	+0.28	3.85
PV	3.97	4.35	+0.38	4.01
HBT	3.24	2.77	−0.47	3.19
PI	3.93	4.47	+0.54	3.98

Source: Processed by the author with IBM SPSS Statistics

DISCUSSION

This study offers a descriptive overview of consumer perceptions toward electric motorcycle (EM) adoption in Indonesia based on 786 respondents. The analysis highlights perceptual patterns across income, gender, and vehicle ownership segments.

Respondents generally showed positive orientations toward EM adoption. Effort Expectancy (mean = 4.44) and Brand Trust (mean = 4.39) recorded the highest scores. These findings are consistent with several previous studies on EM adoption, which also reported

high perceived ease of use (Ho & Wu, 2021). High EE scores likely reflect Indonesian consumers' growing familiarity with electrically powered devices in general, as well as the operational simplicity of EMs, which require no complex engine maintenance such as periodic oil changes or intricate mechanical components. Brand Trust also emerged as a strong construct in this study. This finding indicates that Indonesian consumers generally already hold positive perceptions toward EM brands, regardless of whether those brands are new entrants or long-established players in the market. This pattern suggests that brand novelty does not automatically constitute a trust barrier in the Indonesian EM market, which represents a positive signal for the future development of this industry.

The Habit construct (operationalized as CM habitual lock-in) recorded the lowest mean score among all constructs (3.19), indicating that psychological attachment to conventional motorcycles was generally moderate. Notably, items HBT2 and HBT3, which captured difficulty and perceived impossibility of switching from CM, fell below the scale midpoint, with disagreement rates of 33.5% and 41.5%, respectively. While this overall pattern suggests that the majority of respondents did not feel strongly locked into CM usage, the internal heterogeneity of the construct warrants a deeper behavioral interpretation. Drawing from Polites & Karahanna (2012) framework, which distinguishes between mere incumbent system habit and inertia, this distributional pattern can be understood as reflecting two qualitatively distinct psychological states among respondents. Mere incumbent system habit refers to an automatic behavioral tendency toward an existing system, whereas inertia represents a deeper state of attachment and persistence even in the presence of better alternatives, often driven by conscious or affective resistance to change. The majority of respondents, who disagreed that switching was difficult or impossible, appear to exhibit mere incumbent system habit toward CM use — an automatic behavioral tendency that has not yet developed into inertia. For these respondents, using a CM appears to be a matter of routine convenience rather than deep psychological attachment; the behavior is habitual, but not so deeply ingrained as to create resistance toward switching. In contrast, the minority who rated HBT2 and HBT3 positively may have already crossed into inertia, where switching feels psychologically untenable — continuing the incumbent behavior because it would be stressful to abandon, or because the individual has rationalized the status quo as irreplaceable.

The relatively low rating for public charging infrastructure availability (FC5, mean = 3.40) was consistent across segments, standing notably apart from the other four FC items, which all ranged between 3.89 and 4.02. This internal gap within the FC construct suggests that consumers generally perceive adequate access to information, assistance, and technical knowledge, but remain skeptical specifically about the physical charging network. This finding echoes several earlier studies that highlighted infrastructure readiness as one of the main constraints for EM adoption in Indonesia (Amiruddin et al., 2024)(Adamashvili & Thrassou, 2024)(Mesquita et al., 2025).

Income was the demographic factor that showed the clearest differentiation. Respondents in higher income brackets tended to report more positive perceptions across virtually all constructs, with Purchase Intention showing the steepest gradient (3.81 to 4.53 across income groups). A particularly notable pattern emerged in Price Value, where the lowest-income group rated EM value least favorably (3.89) despite being the segment that could potentially benefit most from long-term fuel and maintenance savings. This pattern suggests that for lower-income consumers, the weight of upfront acquisition cost may dominate their value assessment, overshadowing longer-term economic calculations, a perceptual dynamic that has been documented in other emerging market EV adoption contexts (Roberson & Helveston, 2022).

In contrast, perceptions between male and female respondents were largely similar, with most constructs differing by less than 0.10 points. The most notable divergence was observed in Habit, where female respondents scored higher than male respondents (3.33 vs.

3.04), consistent with the substantially lower EM ownership rate among women (4.8%) compared to men (16.1%) in this sample. This gender gap in Habit scores may reflect differential patterns of vehicle use rather than fundamental attitudinal differences, as female respondents in Indonesia possibly reflecting more exclusive reliance on a single vehicle for daily mobility. This overall pattern of gender convergence across most constructs is in line with more recent studies as EM products become increasingly familiar (Banerjee & Chua, 2025)(Lee & Roh, 2024).

Finally, current EM owners consistently reported higher mean scores than non-owners across nearly all constructs, with the largest differences in Purchase Intention (+0.54), Hedonic Motivation (+0.48), Effort Expectancy (+0.38), and Price Value (+0.38). Conversely, EM owners scored notably lower on Habit (2.77 vs. 3.24), indicating that direct ownership experience is associated with a weaker sense of CM habit lock-in. This experiential gap supports the notion that direct experience plays a crucial role in improving perceptions of new mobility technologies (Næss et al., 2024)(Staab & Liebherr, 2024), and is consistent with the broader domestication of technology perspective, which holds that hands-on engagement reshapes affective and cognitive orientations toward new devices.

CONCLUSION

This study provides a descriptive portrait of Indonesian consumers' perceptions toward electric motorcycle adoption based on 786 respondents. The analysis reveals that Indonesian consumers generally hold positive orientations toward electric motorcycles, with Effort Expectancy and Brand Trust emerging as the two highest-rated constructs, and the perceived environmental benefit of EMs recording the highest individual item mean in the dataset.

Segmentation analyses revealed meaningful perceptual variation across demographic and behavioral groups. Income was the demographic factor with the clearest perceptual differentiation, with Purchase Intention showing the steepest gradient across income groups. Gender differences were minimal, with the principal exception of Habit, where females reported a relatively higher perceived CM attachment, consistent with their lower EM ownership rate. Current EM owners consistently reported more positive perceptions than non-owners across all constructs, underscoring the pivotal role of direct experience in reshaping consumer orientations.

These findings provide a granular descriptive baseline for understanding consumer perceptions toward EM adoption in Indonesia. For practitioners, the findings suggest that experience-based initiatives such as test-ride programs may help reduce perception gaps among non-owners. For policymakers, persistent concerns regarding charging infrastructure and price sensitivity among lower-income consumers highlight two areas that may warrant greater policy attention in supporting the sustainable mobility transition in Indonesia. Since this study is descriptive in nature and does not examine causal relationships between constructs, future studies employing structural or inferential approaches are encouraged to further explain the mechanisms underlying EM adoption behavior in Indonesia.

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