



INVESTIGATING LOCAL MOTORCYCLISTS' DECISION TO USE ELECTRIC MOTORCYCLES IN A DOMINATED TRAFFIC ENVIRONMENT REGION

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Abstract

This study seeks to understand the factors that influence local motorcyclists in Bali to adopt electric motorcycles (e-MCs). Earlier research highlighted several research gaps, including differences in people's readiness to switch, inconsistent findings regarding the effects of environmental concern, and variations in the influence of government support across regions. Based on these gaps and local characteristics, the research looks at how motorcyclists in the SARBAGITA region in Bali view the idea of moving to e-MCs. By collecting data from local motorcyclists and using structural equation modeling (SEM), a model was created to analyze the behavior of adopting e-MCs, leading to nine hypotheses eight of which were confirmed. The study results show motorcyclists in Bali are influenced by various factors when considering a switch to e-MCs, including government policies, risk perceptions, and pricing. Improved conditions and government support enhance switching intentions, while high effort expectations and perceived risks act as barriers. Interestingly, ease of use doesn't always lead to higher adoption rates, and environmental concerns have minimal impact. The study emphasizes the need for better infrastructure and pricing strategies, highlighting the importance of hedonic motivations in Bali's tourism context. Bali government subsidies could lower costs, and enhance charging facilities, while raising public awareness can further encourage e-MC adoption. The findings highlight also the importance of contextual and psychological factors in technology adoption, suggesting that policy incentives alone are insufficient without supporting infrastructure and risk mitigation. The study is limited to local motorcyclists and does not include domestic or international tourists.

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INTRODUCTION

Many vehicles today still run on fossil fuels, making the transportation sector a major contributor to carbon emissions. In fact, most vehicle emissions come from fossil fuels and have a big impact on the climate (Toukabri & Boutaleb, 2025; L. Zhang et al., 2024). Because of this, there is a strong need to switch to electric vehicles (EVs), especially as more people are using vehicles, which increases pollution and worsens climate change. Transitioning to electric mobility also brings many benefits for economic and social development. Electric mobility is an important part of the government's plan to fight climate change (Hakam & Jumayla, 2024).

In Indonesia, more than 85 percent of people use motorcycles (Statistik, 2025). To reduce the harmful effects of using fossil fuels, the Indonesian government is promoting the use of electric motorcycles (e-MCs). In May 2024, the Indonesian government announced a subsidy of over 455 million US dollars to support e-MCs. The legal framework for EVs in Indonesia includes Presidential Regulation No. 55 of 2019, which aims to speed up the adoption of battery EVs for road transport, Minister of Transportation Regulation No. 44 of 2020, which sets rules for testing vehicle types, and Minister of Transportation Regulation No. 45 of 2020, which covers vehicles that use electric motors.

Several studies have examined e-MCs in Indonesia and other Asian countries where motorcycle use is prevalent (Aqmarina et al., 2024; Huda, R.N., Sari, 2024; Murtiningrum et al., 2022). In Bali, traffic congestion has increased the popularity of motorcycles as a preferred transportation option. The island's motorcyclists can be categorized into three groups: locals, domestic tourists, and international tourists, each potentially holding different views on e-MCs influenced by their social, economic, cultural, and environmental backgrounds. Factors such as gender, age, marital status, and income significantly impact individuals' willingness to purchase e-MCs (Shaikh et al., 2023; Huda, R.N., Sari, 2024). These demographic factors, including personal and household characteristics, shape Indonesians' attitudes toward e-MCs (Amilia et al., 2022; Istiqomah et al., 2022; Irwan Putri et al., 2021; Yasir et al., 2022). Additionally, community income levels play a role in driving demand for e-MCs (Huda, R.N., Sari, 2024).

People's opinions about e-MCs vary across Indonesia (Gunawan et al., 2022; Murtiningrum et al., 2022; Najilatil Mazda et al., 2022; Amilia et al., 2022; Istiqomah et al., 2022; Irwan Putri et al., 2021; Yuniaristanto et al., 2024) including among residents of Bali and domestic tourists from other regions. These differences are shaped by several factors. For instance, the number of available charging stations varies greatly between islands, affecting accessibility. E-MCs tend to be more expensive than conventional motorcycles, which can be a barrier for lower-income communities. In areas with inadequate infrastructure, concerns about limited driving range and the scarcity of charging points may lead to reluctance. Cultural traditions also influence preferences; in some regions, conventional motorcycles are favored for their perceived power and suitability for rugged terrain. Awareness of environmental benefits and the efficiency of e-MCs differs between urban centers in Java and rural areas on other islands. Additionally, government policies, incentives, and promotional efforts significantly impact public acceptance and adoption rates. Overall, these interconnected factors result in diverse attitudes and levels of acceptance toward e-MCs across Indonesia.

This study focuses on examining how local motorcyclists in Bali perceive the switch to using e-MCs. Because there have been limited studies on this topic in Bali, the existing research used for comparison is drawn from studies conducted in Indonesia. This study also looks at the gaps in previous research (Najilatil Mazda et al., 2022; Amilia et al., 2022; Istiqomah et al., 2022; Irwan Putri et al., 2021; Huda, R.N., Sari, 2024). These studies identified seven main factors that affect people's intentions and behavior when it comes to using e-MCs: performance expectancy, social influence, effort expectancy, supportive conditions, hedonic motivation, price value, government policies, environmental concern, and attitude towards adopting e-MCs. These factors will be used as variables

to model how motorcyclists in Denpasar, Badung, Gianyar, and Tabanan (SARBAGITA) metropolitan area of Bali perceive switching to e-MCs.

To understand the gaps identified, a questionnaire presented in Table 1 was created for this study. Its purpose is to gather local motorcyclists' views on their likelihood to adopt electric motorcycles (e-MC) in Bali. The unique aspect of this study is that Bali is considered one of the main tourist destinations in Indonesia. A large number of journeys made by people in Bali are mainly for enjoying sights or relaxing. From a psychological perspective, this could shape the attitudes of local motorcyclists in Bali and make them more open to considering the switch to e-MCs. Therefore, results from earlier research on key factors influencing the use of e-MCs in other parts of Indonesia and elsewhere may not apply directly to Bali.

A prior study was carried out in Bali to examine the behavioral intentions of individuals to switch to e-MCs (Penindra et al., 2025). This current study, however, builds upon and updates that previous research by refining the conceptual model. The study's model is built on the Theory of Planned Behavior, including attitude, Perceived Behavioral Control (PBC), and intentions, with intention serving as a mediating variable, and uses structural equation modeling (SEM) to analyze the data. For more details on SEM, one may refer to Bachtiar (2023).

Additionally, the model incorporates the actual behavior of owning an e-MC. Intentions, or purchase intentions, play a crucial role as a central and frequently used mediating factor that connects external influences such as environmental concern, social pressure, perceived value, and government policies to the final decision of purchasing or renting an e-MC. The improved model highlights how intentions act as a linking mechanism between beliefs and behavior. Local motorcyclists typically do not move directly from having high environmental awareness to buying an e-MC. Instead, factors like environmental concern, social influence, and perceived economic benefits first shape the intention to adopt an e-MC, which then leads to the actual purchase or rental decision.

The special aspect of this study is that Bali has a strong demand and a high potential for adopting e-mc. In Bali, a large number of households own a motorcycle, with over 90 percent having one. The need for e-MCs is not clearly known. In reality, the number of e-MCs owned is quite low, making up just around 1 percent of all motorcycles in Bali. One reason for owning a motorcycle in Bali, besides using it personally, is to rent it to both domestic and international tourists.

Tourists in Bali frequently choose motorcycles as their mode of transportation because they are cost-effective and offer a convenient way to bypass traffic congestion. This group is slowly looking for more eco-friendly and quick rental options. In addition, the way foreign tourists ride in Bali is greatly influenced by the behavior of local motorcyclists. If the local motorcyclists implement e-MC, then both international and domestic tourists who rent the e-MC will use it. Compared to other regions in Indonesia, this scenario is unique to Bali, which is the country's most popular tourist destination.

The high demand for motorcycles is also evident in Bali's mixed traffic conditions, where over 85 percent of the transport modes are motorcycles, which makes it important to examine the adoption of e-MCs. Bali is a small island, which means the distance between different places on the island is not very far when compared to other islands in Indonesia. Because of this, most people in Bali depend on motorcycles for their daily tasks, including commuting to work, shopping, and leisure, and they use them for traveling throughout the week as well as on weekends.

The transition toward electric mobility has become a central topic in transportation and sustainability research, particularly in developing countries where motorcycles dominate urban traffic. Electric motorcycles (e-MCs) are increasingly viewed as a viable solution to reduce greenhouse gas emissions and urban air pollution (X. Zhang & Chang, 2023; Hakam & Jumayla, 2024). However, adoption rates remain uneven across regions, suggesting that technological readiness alone does not guarantee behavioral change. Recent international research emphasizes that electric vehicle adoption is

shaped by a combination of economic, psychological, infrastructural, and policy-related factors (Toukabri & Boutaleb, 2025; Yang & Lan, 2023).

This study is grounded in the Theory of Planned Behavior (TPB), which posits that behavior is determined by intention (Kusmira et al., 2025), and intention is influenced by attitude (Kusuma & Suniantara, 2025; Korry, 2026), subjective norm, and perceived behavioral control (Taherdoost, 2018). TPB has been widely applied in sustainable transportation studies, demonstrating strong explanatory power in predicting EV purchase intentions (Yeğın & Ikram, 2022). In EV contexts, attitudes often reflect perceptions of usefulness, cost, and environmental benefit; subjective norms capture social influence; and perceived behavioral control relates to infrastructure availability and financial capability.

Beyond TPB, the Unified Theory of Acceptance and Use of Technology (UTAUT and UTAUT2) has been extensively used to explain electric vehicle adoption. Performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, and price value are consistently identified as significant predictors (Manutworakit & Choocharukul, 2022; Abbasi et al., 2025). Studies in emerging markets highlight that hedonic motivation and price value may play a stronger role than environmental concern, especially in consumer-oriented mobility contexts (Buenaseda et al., 2025; Hidayat et al., 2026).

Government intervention is frequently a decisive factor in accelerating EV adoption. Financial incentives, tax reductions, and regulatory support significantly increase consumer intention. (Champahom et al., 2025). In developing countries, policy credibility and visibility influence perceived behavioral control and reduce uncertainty (Najilatil Mazda et al., 2022). However, several studies caution that subsidies alone are insufficient without adequate charging infrastructure and service networks (Istiqomah et al., 2022).

Risk perception is a major barrier in adopting new mobility technologies. Concern about battery durability, charging availability, maintenance, and resale value negatively influence intention (Yang & Lan, 2023; Jain et al., 2022). Although some Indonesian studies report an insignificant effect of perceived risk (Murtiningrum et al., 2022), recent international research suggests that in early-stage markets, technological uncertainty strongly deters adoption. Performance expectancy consistently predicts positive adoption intentions, as consumers prioritize efficiency, reliability, and operational cost savings (Agustina et al., 2025). Conversely, effort expectancy presents mixed results. While ease of use generally enhances adoption, some studies indicate that in contexts where infrastructure is inadequate, perceived effort may negatively affect switching intentions (Yuniaristanto et al., 2022).

Hedonic motivation, defined as the enjoyment derived from using a technology, has gained increasing attention in EV studies. In urban Asian settings, hedonic factors significantly influence adoption decisions, particularly among younger consumers (Irwan Putri et al., 2021). In tourism-dominated economies, mobility choices are often associated with experiential value rather than purely functional considerations. This perspective aligns with findings that emotional gratification can outweigh environmental concern in shaping behavioral intention.

Environmental concern is traditionally viewed as a strong predictor of pro-environmental behavior (Yeğın & Ikram, 2022). However, empirical findings are inconsistent. Several studies in developing economies report that environmental awareness does not necessarily translate into purchase intention, especially when financial or infrastructural barriers are present (Aqmarina et al., 2024). This suggests a potential attitude-behavior gap in sustainable mobility adoption.

RESEARCH METHODO

The participants are local motorcyclists who were asked to take part in a larger study about e-MCs. The study employed a purposive sampling technique to select respondents who were considered capable of providing relevant information regarding the adoption of electric motorcycles (e-MCs). Purposive sampling was considered appropriate because the objective of this study was to investigate the behavioral intentions of a specific population, namely local motorcyclists residing in the SARBAGITA metropolitan area (Denpasar City, Badung Regency, Gianyar Regency, and Tabanan Regency), where motorcycle use dominates daily transportation.

To ensure that the selected respondents were relevant to the research objectives, several inclusion criteria were established. Respondents were required to (1) be at least 17 years old, (2) reside in one of the SARBAGITA areas, (3) use a conventional motorcycle as their primary mode of transportation, (4) possess sufficient knowledge or awareness of electric motorcycles, and (5) voluntarily agree to participate in the survey. Individuals who did not meet these criteria or submitted incomplete questionnaires were excluded from the analysis.

Before getting their permission to join, the researchers explained what the study was about and gave them instructions to make sure they felt safe. Once they agreed to take part, they were given an online questionnaire to complete. In total, 500 local motorcyclists took part and agreed to answer the questions. Out of these, 473 (which is 94.6 percent) were able to complete the questionnaire, including 214 women and 259 men. The questionnaire, shown in Table 1, has 11 sections and includes 45 questions in total. Participants were asked to rate different elements using a 5-point Likert scale, where 1 means "strongly disagree" and 5 means "strongly agree." They also received a brief explanation of the purpose of each set of questions. The survey covers information on the participants' social and demographic details, their awareness of e-MCs, their willingness to switch from traditional motorcycles to e-MCs, and their views on using e-MCs. These variables are listed in Table 1 and were chosen based on the context of motivation, as the study focuses on consumer behavior and knowledge, which are influenced by the strengths of e-MCs.

Table 1.
Measurement Constructs, Questionnaire Items, and Reference Sources

Items	References
Performance expectation - 4 items (scale from 1 to 5)	(Abbasi <i>et al.</i> , 2021; (Irwan Putri <i>et al.</i> , 2021)
Effort expectation - 4 items (scale from 1 to 5)	(Abbasi <i>et al.</i> , 2021); (Huda, R.N., Sari, 2024)
Social Influence - 4 items (scale from 1 to 5)	(Abbasi <i>et al.</i> , 2021)
Hedonic motivation - 3 items (scale from 1 to 5)	(Irwan Putri <i>et al.</i> , 2021)
Facilitating conditions - 4 items (scale from 1 to 5)	(Irwan Putri <i>et al.</i> , 2021)
Price Value - 4 items (scale from 1 to 5)	(Irwan Putri <i>et al.</i> , 2021)
Risk perception - 10 items (scale from 1 to 5)	(Gunawan <i>et al.</i> , 2022;
Environmental concern - 4 items (scale from 1 to 5)	(Yeğin & Ikram, 2022)
Government policy - 3 items (scale from 1 to 5)	(X. Zhang & Chang, 2023)
Intention to shift mode to e-MC- 4 items (scale from 1 to 5)	(Abbasi <i>et al.</i> , 2021)
Socio-demographic traits (Gender, Age, Marital Status)	

Source: Research Data, 2025

The expectation of performance refers to the level of e-MC that can benefit consumers in performing a specific activity. The expectancy of efforts mentions the level of ease related to the use of e-MC. Social influence refers to the importance that others find in the use of e-MC. The facilitating conditions refer to the extent to which an individual thinks that the organizational and technological infrastructure is applied to support the use of e-MC. Hedonic motivation is to do something because satisfaction reflects the emotions of users, and users tend to maximize such emotions, such as joy and

fun. Price value can be defined as consumer awareness, a compromise between the monetary costs of e-MC and its cognitive advantages (Irwan Putri et al., 2021).

Table 2 describes all eight latent variables in the constructed model that have been determined by using factor analysis. The principal component analysis (PCA) was used to determine the components that only meet the criteria, and is done using rotated component loadings with a reliability of 0.7 or more and an eigenvalue of 1 or more. The government's policy consists of three factors with factor loadings ranging from 0.78 to 0.81. In addition, a high level of internal consistency has been achieved, as evidenced by Cronbach's alpha greater than 0.90. Cronbach's Alpha has been used to estimate the data reliability by assessing the unidimensionality of a single latent construct as a consistency coefficient indicating the degree of fit of the variables or factors (Hair et al., 2021)

Table 2.
Reliability Analysis

Latent variables	Observed variables	Reliability	
		Loading factors	Cronbach's Alpha
Risk perception	X7.2 (The battery can be damaged if it gets too hot or if water enters it).	0.761	
	X7.3 (The battery indicator may not show the real amount of charge left).	0.769	0.779
	X7.4 (Not many repair shops can fix problems with the e-MC).	0.763	
Hedonic Motivation	X4.1 (Using an e-MC is fun)	0.810	
	X4.2 (Using an e-MC is enjoyable)	0.799	0.888
	X4.3 (Using an e-MC is very entertaining)	0.745	
Effort Expectation	X2.2 (Riding an e-MC does not need any engineering skills)	0.795	
	X2.3 (It will be easy to become skilled when riding an e-MC)	0.781	0.804
	X2.4 (It is easy and simple to interact with an e-MC)	0.760	
Performance expectation	X1.1 (Using e-MCs as a new technology will make work more efficient)	0.752	
	X1.2 (Riding an e-MC will help complete tasks faster)	0.764	0.867
	X1.4 (Using e-MCs will improve performance)	0.777	
Environmental concern	X8.1 (I feel concerned about the environment)	0.759	
	X8.2 (Environmental conditions affect my health)	0.836	0.823
	X8.4 (Everyone has a duty to protect the environment)	0.772	
Government policy	X9.1 (Tax incentives will encourage more people to use e-MCs)	0.812	
	X9.2 (Subsidies will encourage more people to use e-MCs)	0.787	0.904
	X9.3 (Low credit interest rates will increase the desire to use an e-MC)	0.806	
Price Value	X6.1 (The price of an e-MC is very reasonable)	0.790	
	X6.2 (E-MCs are a good deal for the money)	0.739	0.831
Facilitating conditions	X5.1 (Having all the required resources to use an e-MC)	0.706	
	X5.2 (Having the necessary knowledge to use an e-MC)	0.798	0.754
Intention to use e-MC	Y1.1 (I plan to use an e-MC)		
	Y1.2 (I would recommend others to buy and use an e-MC)	N/A	N/A
	Y1.3 (I intend to buy an e-MC even if it is expensive)		
Behavior (owning an e-MC)	Y1.4 (I am very likely to buy an e-MC in the future)		
	Z1.1 (Purchase or rent an e-MC in the future)		
	Z1.2 (Purchase price of an e-MC at a suitable price in rupiah)	N/A	N/A
	Z1.3 (Rent price of an e-MC at a suitable daily rental price in rupiah)		

Source: Research Data, 2025

The research hypotheses were constructed to test the relationship between the latent and observed variables presented in Tables 1 and 2, as follows.

H₁: The risk perceptions influence the intentions to use e-MC

H₂: The hedonic motivation affects the intentions to use e-MC

H₃: The effort expectations affect the intentions to use e-MC

H₄: The performance expectations influence the intentions to use e-MC

H₅: The environmental concern affects the intentions for the use of e-MC

H₆: The government policies affect the intentions to use e-MC

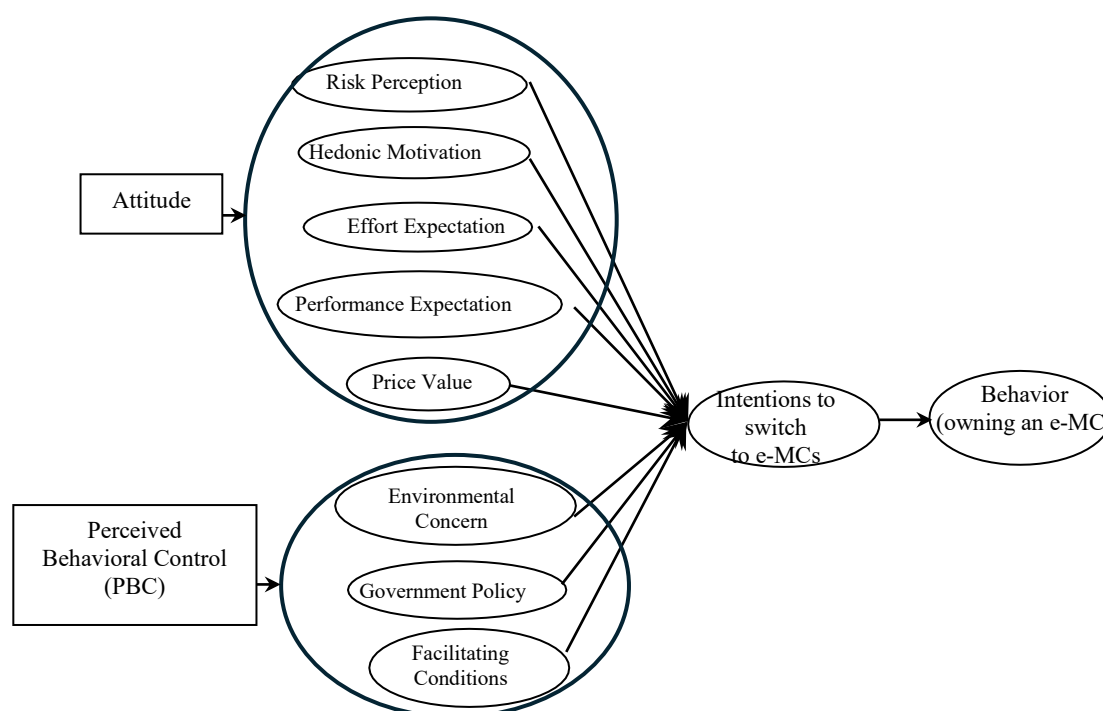
H₇: The price values influence the intentions for the use of e-MC

H₈: The facilitating conditions influence the intentions to use e-MC

H₉: The intention to switch to using an e-MC affects the behavior of owning an e-MC

The model was first built based on the Theory of Planned Behavior (TPB) model of Ajzen. This theory is influenced by three main factors: people's positive or negative feelings about a behavior, their perception of social pressure or expectations (subjective norms), and how easy or difficult they think it is to perform the behavior (perceived behavioral control or PBC). These factors together shape their intention to switch to e-MC. This intention then affects their actual behavior, such as buying or renting e-MC. By using TPB and considering the latent variables listed in Table 2, the attitude variable includes factors like price value, enjoyment or pleasure (hedonic motivation), how much effort is needed (effort expectation), how effective the behavior is (performance expectation), and how risky it feels (risk perception). The PBC variable includes factors such as government policies, the condition of the facilities, and environmental concerns. This structure is illustrated in Figure 1.

Figure 1 presents the conceptual model, developed based on the research hypotheses. This model illustrates how the observed and hidden variables are connected. The hidden constructs are shown as elliptical shapes, while their measured indicators are displayed as rectangular blocks. Standardized path coefficients are clearly marked on the arrows to show the strength and importance of the relationships between the variables.



Source: Research Data, 2025

Figure 1. The Conceptual Model for Switching to E-MCS

Table 3 displays the goodness of fit (GoF) for the model developed in this study. The model shows a very good fit based on commonly accepted standards for SEM (Hair et al., 2021). The model is statistically significant, meaning the results can be used to examine how attitude, perceived behavioral control, intentions to switch, and ownership of e-MCs are related to each other.

Table 3.
Goodness of Fit

Fit Index	Value	Recommended Cut-off	Assessment
Chi-Square	543.114	—	—
CMIN/DF	1.68	≤ 2.00	Excellent
RMSEA	0.038	≤ 0.080	Excellent
GFI	0.93	≥ 0.90	Excellent
CFI	0.97	≥ 0.95	Excellent
TLI	0.96	≥ 0.95	Excellent

Source: Research Data (2025)

RESULTS AND DISCUSSION

Table 4 presents the relationships between the model components and the estimated values. Eight hypotheses (H₁, H₂, H₃, H₄, H₆, H₇, H₈, and H₉) were statistically and significantly supported. The SEM results show that motorcyclists' intentions to switch to e-MCs are influenced by facilitating conditions, government policies, risk perceptions, hedonic motivations, effort expectations, performance expectations, and price value. Additionally, the decision to own an e-MC is significantly affected by these intentions.

Table 4.
Model Regression Weight

Latent variables	Observed variables	Reliability	
		Loading factors	Cronbach's Alpha
Risk perception	X7.2 (The battery can be damaged if it gets too hot or if water enters it).	0.761	0.779
	X7.3 (The battery indicator may not show the real amount of charge left).	0.769	
	X7.4 (Not many repair shops can fix problems with the e-MC).	0.763	
Hedonic Motivation	X4.1 (Using an e-MC is fun)	0.810	0.888
	X4.2 (Using an e-MC is enjoyable)	0.799	
	X4.3 (Using an e-MC is very entertaining)	0.745	
Effort Expectation	X2.2 (Riding an e-MC does not need any engineering skills)	0.795	0.804
	X2.3 (It will be easy to become skilled when riding an e-MC)	0.781	
	X2.4 (It is easy and simple to interact with an e-MC)	0.760	
Performance expectation	X1.1 (Using e-MCs as a new technology will make work more efficient)	0.752	0.867
	X1.2 (Riding an e-MC will help complete tasks faster)	0.764	
	X1.4 (Using e-MCs will improve performance)	0.777	
Environmental concern	X8.1 (I feel concerned about the environment)	0.759	0.823
	X8.2 (Environmental conditions affect my health)	0.836	
	X8.4 (Everyone has a duty to protect the environment)	0.772	
Government Policy	X9.1 (Tax incentives will encourage more people to use e-MCs)	0.812	0.904
	X9.2 (Subsidies will encourage more people to use e-MCs)	0.787	
	X9.3 (Low credit interest rates will increase the desire to use an e-MC)	0.806	
Price Value	X6.1 (The price of an e-MC is very reasonable)	0.790	0.831
	X6.2 (E-MCs are a good deal for the money)	0.739	
Facilitating conditions	X5.1 (Having all the required resources to use an e-MC)	0.706	0.754
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Intention to use e-MC	Y1.1 (I plan to use an e-MC)	N/A	N/A
	Y1.2 (I would recommend others to buy and use an e-MC)		
	Y1.3 (I intend to buy an e-MC even if it is expensive)		
Behavior (owning an e-MC)	Y1.4 (I am very likely to buy an e-MC in the future)	N/A	N/A
	Z1.1 (Purchase or rent an e-MC in the future)		
	Z1.2 (Purchase price of an e-MC at a suitable price in rupiah)		
	Z1.3 (Rent price of an e-MC at a suitable daily rental price in rupiah)		

Note: *, **, and *** are significantly different from zero at 0.10, 0.05, and 0.001 levels, respectively.

Source: Research Data (2025)

Investigating Local Motorcyclists Decision to Use Electric Motorcycles Dominated Traffic Environment Region, I Made Dwi Budiana Penindra, Dewa Made Priyantha Wedagama, I Gusti Ngurah Priambadi, Anak Agung Istri Agung Sri Komaladewi, and I Ketut Suarsana

Table 4 shows that when people expect more effort to switch to e-MCs, they are less likely to want to change their mode of transport. However, if the facilitating conditions are better, people are more likely to switch to e-MCs. The motorcyclists who really intend to switch to e-MCs are those who think it won't take much effort and believe the facilitating conditions are good. Effort expectations do not have a positive effect on the intention to switch to e-MCs. This is related to how easy it is to use an e-MC, as mentioned in Irwan Putri et al., (2021). Surprisingly, the easiest to use doesn't always mean more intention to switch; sometimes, it leads to less interest in switching.

RESULT AND DISCUSSION

The facilitating conditions in Bali have a positive impact on motorcyclists' intention to switch to e-MCs. The better the facilitating conditions, the more likely they are to switch. Facilitating conditions refer to how much someone believes that the organizational and technological infrastructure supports the use of e-MCs, as discussed by Gunawan et al., (2022). Since awareness of technology use is influenced by factors like demographics, target users, and cultural aspects, the analysis is based on previous studies from Indonesia.

Because effort expectancy has a negative relationship with the intention to shift, it suggests that the infrastructure for e-MCs in Bali is insufficient to directly influence people's attitudes. (Yuniaristanto et al., 2022). This means the Bali government should improve the infrastructure so that people feel using e-MCs is easier. This is also consistent with Irwan Putri et al., (2021), who found that better facilitating conditions lead to a higher intention to use e-MCs.

The environmental concern did not have a significant impact on the switching intention to e-MCs in Bali. This unexpected result could be because environmental concern is viewed as a mix of thinking and feeling about protecting the environment (Murtiningrum et al., 2022). In studies about environmental behavior, like the intention to buy eco-friendly products, environmental concern is usually a direct factor that influences both intention and actual behavior (Murtiningrum et al., 2022). This discovery offers a fresh look at how environmental concern plays a role in adopting e-MCs (Murtiningrum et al., 2022)

A past study found that the role of stakeholders in increasing the use of e-MC in Indonesia follows a triple helix approach, in which the three stakeholders include universities, industry, and government (Najilatil Mazda et al., 2022). This study found that the Bali government policies were positively connected with switching modes to e-MCs. This indicates that the Bali government policies were perceived to have issued any significant policies on e-MCs, so the motorcyclists consider the government policies on switching modes to e-MCs.

A previous study found that stakeholders play a key role in increasing e-MC use in Indonesia through a triple helix approach, involving universities, industry, and the government (Najilatil Mazda et al., 2022). This study found that Bali's government policies had a positive connection with switching to e-MCs. This means that motorcyclists believe the government has introduced relevant policies, which makes them consider switching to e-MCs.

Risk perception is linked to a lower intention to switch to e-MCs, showing that risk is a major barrier for customers when adopting new technology. This goes against some earlier studies from other parts of Indonesia (Murtiningrum et al., 2022), which did not find a significant impact of risk on people's attitudes toward EVs. However, local motorcyclists in Bali are still not prepared to deal with the risks involved in using e-MCs and are not sure how to manage those risks.

The expectations people have about the performance of e-MCs play a big role in whether local motorcyclists in Bali decide to switch to using them. This positive influence helps shape local opinions and makes people more open to the idea of switching. Performance expectations reflect how locals

view the technological improvements in e-MCs. This finding backs up the idea that better technology makes people see e-MCs more favorably and more willing to own them (Agustina et al., 2025). It's clear that when e-MCs perform well and their prices are lower, it motivates more local motorcyclists to adopt them.

The price of an e-MC is both statistically and significantly accepted. There is a positive link between the price of e-MCs and the intention of motorcyclists to use them. This suggests that motorcyclists in Bali see the price of e-MCs as competitive compared to traditional motorcycles. However, a previous study in Indonesia (Aqmarina et al., 2024; Huda, R.N., Sari, 2024) highlighted that a major challenge in adopting electric vehicles is their high initial cost, as consumers are more likely to choose e-MCs if the price matches their budget. Concerns about the depreciation of EVs are also important, as they can affect the resale value. This is consistent with findings from Aqmarina et al., (2024). Even though these results are positive, the study suggests that Bali's government should also work on adjusting the price range of e-MCs. This finding can also help producers and decision-makers to offer a wider range of prices, making it easier for people with different financial situations to consider using e-MCs.

Compared to a prior study by Putri et al. (2021), which was conducted in Jakarta, the capital of Indonesia, this study finds that hedonic motivation positively and significantly influences the adoption of e-MC in Bali. Unlike motorcyclists in Jakarta, local motorcyclists in Bali appear to have a stronger inclination to participate in activities because they derive personal satisfaction and emotional fulfillment from these experiences. They are more inclined to pursue activities that bring them enjoyment and happiness. This may be attributed to the fact that Bali is the primary tourist destination in Indonesia, with most visits focused on sightseeing and leisure activities.

It is important to recognize the limitations that might impact how these solutions are put into action. First, government actions like subsidies and incentives can lower the initial costs. In Bali, the reliance on tourism means that people's desire for fun and enjoyment, especially through e-MCs, plays a big role in making them more popular. To keep people enjoying motorcycling, it is key to introduce new technologies, such as having more charging stations and shorter charging times. This also helps build confidence among local motorcyclists. Alongside this, there should be more public awareness efforts to lower the worries people have about e-MCs, which can help more people switch to using them.

This research suggests revising current technology adoption theories to better address large populations with affordable transportation options. It highlights the significance of situational factors, such as mixed traffic and charging station availability, over personal attitudes. Key influences on behavior are classified as push factors (safety and environmental concerns) and pull factors (perceived usefulness and financial incentives). In developing nations, product value often hinges on practicality rather than environmental benefits. Concerns about battery life and charging ease significantly affect e-MC usage. Future studies should differentiate between factors motivating initial e-MC use and those influencing ongoing use.

This study has several limitations that should be acknowledged. First, the research focused exclusively on local motorcyclists in the SARBAGITA metropolitan area of Bali. Therefore, the findings may not be fully generalizable to motorcyclists in other regions of Indonesia that have different socioeconomic characteristics, transportation infrastructure, and travel behavior. Second, the study employed a cross-sectional survey design, which captures respondents' behavioral intentions at a single point in time. Future longitudinal studies are recommended to examine changes in adoption intentions as electric motorcycle technology, charging infrastructure, and government policies continue to evolve. Third, although the proposed model incorporated several important determinants derived from the extended UTAUT2 framework, other potentially influential variables, such as consumer trust, environmental knowledge, charging anxiety, lifestyle, and personal innovativeness,

were not included. Finally, this study investigated only local motorcyclists and did not consider domestic or international tourists, despite their substantial contribution to motorcycle usage in Bali. Future research should compare these user groups to provide a more comprehensive understanding of electric motorcycle adoption in tourism-oriented destinations.

CONCLUSION AND SUGGESTION

This study examines the reasons and objectives of local motorcyclists in Bali who are considering switching to electric motorcycles (e-MCs). To determine the important factors, the researchers reviewed previous studies to identify the relevant variables. Factor analysis and principal component analysis were applied to uncover key underlying variables. These variables were used to develop the research questions and hypotheses, which were then incorporated into a conceptual model using structural equation modeling (SEM). The model was designed to assess the intention of motorcyclists to adopt e-MCs. The findings of this study contribute to the advancement of technology adoption, sustainable transportation, and consumer behavior literature by demonstrating that the adoption of electric motorcycles is influenced not only by technological perceptions but also by contextual factors associated with regional characteristics and government intervention. These findings provide empirical evidence supporting the extension of UTAUT2 in emerging economies, particularly in tourism-oriented regions where motorcycle usage dominates daily mobility. The most significant factor influencing the adoption of e-MCs is the context, particularly government policies. This is followed by price value and psychological factors, like hedonic motivations, performance expectations, and perceived behavioral control, which are connected to the availability of facilitating conditions. Notably, psychological factors have a strong influence on the decision-making process. The study found that effort expectations, or how easy it is to use e-MCs, and risk perceptions are negatively related to the intention of local motorcyclists to switch. Both positive and negative factors are influenced by the policies of the Bali government, which should focus on improving e-MC infrastructure and adjusting prices to encourage greater adoption.

This study provides important insights for the future development of e-MC adoption in countries like Indonesia. First, it highlights that regional strategies need to be tailored to specific areas and should include more than just financial incentives, such as infrastructure development. Second, it emphasizes the need for governments to address not only economic but also social and psychological barriers that may prevent people from switching to e-MCs. Future studies should consider other groups of motorcyclists, such as domestic and international tourists. Although the precise figures on how many tourists ride motorcycles are not available, the high number of rented bikes in Bali, however, indicates that tourists play a significant role. It is important to understand the differences between local and tourist motorcyclists to develop solutions that align with local tourism regulations and support the creation of sustainable transportation options in Bali.

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