Consumer Intentions Toward Electric Vehicle Ride-Hailing: Roles of Value, Environment, and Attitude

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Abstract. Jakarta, a city profoundly affected by air pollution, requires an urgent transition to sustainable transportation solutions. GoJek and Grab, as prominent ride-hailing and app platforms in Indonesia, offer electric vehicle (EV) services to promote sustainable transportation in Jakarta. Nonetheless, the willingness of people to utilize EV services remains limited, and research aimed at assessing the underly-ing factors influencing this intention is still inadequate. The current study aims to analyze the influence of perceived value, environmental concern, and attitude on the intention to utilize EV services offered by GoJek and Grab in Jakarta. A total of 374 samples were collected through purposive sampling in May 2025. The findings from the PLS-SEM analysis indicate that three out of the four hypothe-ses were accepted. Residents of Jakarta are still showing a favorable attitude to-wards the adoption of EV services. Furthermore, it was determined that perceived value and attitude serves as the most significant factors influencing individuals' intention to utilize electric vehicle services. The predictive model developed in this study demonstrates a moderate value, with an R2 of 0.551. This study offers var-ious recommendations for GoJek and Grab aimed at enhancing customer adop-tion of electric vehicle services.

Keywords: Electric Vehicle, Attitude, Perceived Value, Environmental Value, Ride-Hailing Services.

1 Introduction

The rise in Greenhouse Gas (GHG) emissions contributing to global climate change represents a significant challenge in Indonesia. The transportation of fossil fuels is identified as a significant source of greenhouse gas emissions in Indonesia [1]. De-spite various policy interventions, including the expansion of public transportation, private vehicle dependency remains high, accounting for 81% of daily mobility and contributing to 67% of urban air pollution [2], [3]. This indicates a persistent gap be-tween policy efforts and public behavioral change, where low environmental aware-ness and concern continue to hinder the transition towards sustainable transportation.

In response, the Indonesian government has accelerated electric vehicle (EV) adoption including the integration of EV services into ride-hailing platforms such as Gojek and Grab. However, the adoption of EV-based ride-hailing services remains

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suboptimal. Consumers report functional and psychological barriers, including perceived limitations in performance, comfort, and safety [4], as well as insufficient information regarding EV benefits [5], [6]. These challenges suggest that the issue extends beyond technological readiness to consumer perception and evaluation.

Although ride-hailing services have become deeply embedded in urban mobility, with more than 1.13 million daily trips in Jakarta, empirical studies examining EV adoption in this specific usage context remain limited. Prior research predominantly focuses on EV purchase intention or general adoption behavior [7], [8], [9], overlooking the service-based consumption setting where usage decisions are more frequent, situational, and behavior-driven. This represents a critical gap, as ride-hailing users constitute a high-impact segment in reducing urban emissions.

This study offers a novel contribution by extending EV adoption research into a service-based, platform-mediated context, while simultaneously integrating environmental concern and perceived value through the mediating role of attitude to explain consumer usage decisions [10], [11]. Addressing this gap, the present study investigates the behavioral determinants of EV service usage in ride-hailing applications by integrating environmental concern and perceived value as key predictors, with atti-tude as a mediating mechanism [12]. While these variables have been widely validat-ed in the context of EV adoption [13], [14], their explanatory power within ride-hailing services remains underexplored. By focusing on this context, the study aims to provide more context-specific insights into consumer decision-making and contribute to more effective strategies for accelerating EV adoption in urban transportation systems.

2 Research Methods

This study employs a quantitative approach to evaluate the intention to utilize EV in ride-hailing services among population in Jakarta as illustrated in Figure 1. An online questionnaire comprising 20 questions was created and disseminated from May 9 to May 21, 2025, via social media platforms. A total of 374 valid samples were gath-ered using a purposive sampling method with the criteria people who stay in Jakarta and knowing the EV services in ride-hailing platform by Gojek and Grab. The prima-ry data underwent analysis through PLS-SEM utilizing SmartPLS version 4.1.1.2.

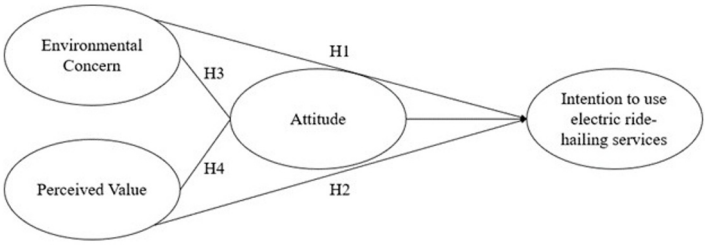

Fig 1. The Proposed Model

3 Results and Discussion

According to the data presented in Table 1, the sample consisted of 374 valid respondents, predominantly female at 77%, with the majority aged between 21 and 25 years, accounting for 64% of the total. All participants are distributed across different areas in Jakarta.

Table 1. Demographic Profile of Respondents

	Frequencies	Percentage
Gender		
Male	87	22%
Female	287	77%
Age Range		
18-20	71	19%
21-25	241	64%
26-30	22	6%
31-35	20	5%
36-40	14	4%
>40	6	2%
Domicile		
South Jakarta	136	36%
East Jakarta	85	23%
Central Jakarta	63	17%
West Jakarta	47	13%
North Jakarta	43	11%

Source: Author's work

Measurement Model Test. The results of the measurement model test (refer to Table 2) indicate that all outer loadings exceeded 0.6, thereby satisfying the minimum threshold [15]. Furthermore, the internal consistency of the model demonstrated reliability, as the Cronbach's Alpha and Composite Reliability values exceeded 0.7 and 0.8, respectively. Also, all variables are significantly valid as the Average Value Everage values range from 0.507 to 0.572.

Table 2. Measurement Model Test Results

Item	Outer Loading	Cronbach's Alpha	Composite Reliability	Average Value Extracted
Attitude (ATT)		0.747	0.840	0.568
ATT1	0.752			
ATT2	0.761			
ATT3	0.785			
ATT4	0.715			
Environmental Concern (EC)		0.775	0.848	0.527

EC1	0.691			
EC2	0.693			
EC3	0.750			
EC4	0.768			
EC5	0.724			
Perceived Value (PV)		0.838	0.878	0.507
PV1	0.682			
PV2	0.696			
PV3	0.739			
PV4	0.756			
PV5	0.719			
PV6	0.682			
PV7	0.709			
Intention to Use (IU)		0.750	0.842	0.572
IU1	0.821			
IU2	0.725			
IU3	0.735			
IU4	0.741			

Source: Author's work

Table 3 presents the results of discriminant validity as assessed by the Fornell-Larcker criterion. The findings validated that all constructs exhibit a significant level of discriminant validity, as each construct demonstrated a higher value compared to the others [15].

Table 3. Discriminant Validity Test Result (Fornell-Lacker Criterion)

	ATT	**EC**	**IU**	**PV**
ATT	0.754			
EC	0.391	0.726		
PV	0.699	0.379	0.757	
IU	0.712	0.377	0.665	0.712

Source: Author's work

Structural Model Test. The following step involves conducting a structural model test for hypothesis testing. According to Table 4, Hypotheses 2, 3, and 4 were accepted, as the p-values were below 0.05 and the T statistic exceeded 1.96. The perceived value emerged as the most significant variable affecting the intention for using EV in ride-hailing services, both directly and indirectly through attitude. This finding is consistent with prior stud-ies which highlight that perceived value plays a crucial role in shaping EV adoption [16]. However, the p-value for environmental concern regarding the intention to use exceeded 0.05. It means that environmental concern did not directly influence indi-viduals' intentions to utilize EV in ride-hailing services. This finding contrast with sev-eral prior studies that identified it as a significant predictor of EV adoption [16]. Therefore, hypothesis 1 was not supported. This inconsistency can be

explained through the attitude-bahavior gap, where individuals express environmental aware-ness but do not translate it into actual behavioral intention. Further, the R^2 value for the current model was 0.551. The antecedent variables of the current model possess moderate explanatory power [15] regarding the intention to utilize EV in ride-hailing services.

Table 4. Hypotheses Testing Results

Hypotheses	B	T statistics	P Values	Decisions
H1: EC→IU	0.087	1.686	0.092	Rejected
H2: PV→IU	0.322	5.543	0.000	Accepted
H3: EC→ATT→IU	0.062	2.866	0.004	Accepted
H4: EC→ATT→IU	0.287	6.768	0.000	Accepted

Source: Author's work

4 Conclusion

This study examines the factors influencing the intention to use EV ride-hailing services in Jakarta. The findings reveal that perceived value is the strongest driver of intention, indicating that tangible benefits such as cost efficiency, comfort, and modern image play a crucial role in encouraging adoption. Perceived value also strengthens positive attitudes toward EV services. Meanwhile, environmental concern does not directly influence intention but operates indirectly through attitude, suggesting that pro-environmental awareness must translate into favorable evaluations of the service to impact behavior.

From a managerial perspective, Gojek and Grab should prioritize enhancing and clearly communicating the tangible benefits of EV ride-hailing services rather than relying solely on environmental appeals. Emphasizing user experience and practical advantages is more effective in driving adoption. This study is limited to intention-based analysis within the Jakarta context. Future research should explore specific dimensions of perceived value, examine actual usage behavior through longitudinal approaches, and consider broader demographic segments to improve generalizability.

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