

Influencer-Mediated Range Anxiety Mitigation: Examining Social Media Marketing Pathways to Electric Vehicle Adoption in Vietnam's Digital Economy

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ABSTRACT: This study investigates the mechanisms through which social media influencer marketing mitigates range anxiety to facilitate electric vehicle adoption within Vietnam's rapidly evolving digital economy. Drawing upon the Technology Acceptance Model, Theory of Planned Behaviour, and Social Influence Theory, this research develops a comprehensive theoretical framework that examines the mediating role of range anxiety reduction in the relationship between influencer marketing effectiveness and electric vehicle adoption intentions. Employing a quantitative approach with structural equation modelling (SEM) using partial least squares and fuzzy-set qualitative comparative analysis (fsQCA), this study analysed data from 487 Vietnamese consumers through a structured questionnaire survey. The measurement model demonstrated robust psychometric properties with composite reliability values exceeding 0.8 and average variance extracted values above 0.5. Structural model results revealed that influencer credibility ($\beta = 0.312$, $p < 0.001$) and message persuasiveness ($\beta = 0.287$, $p < 0.001$) significantly predict range anxiety mitigation, which subsequently influences electric vehicle adoption intentions ($\beta = 0.445$, $p < 0.001$). The fsQCA analysis identified three configurational pathways leading to high adoption intentions, with influencer expertise and trustworthiness emerging as necessary conditions. This research contributes to the emerging literature on digital marketing in sustainable transportation by demonstrating how targeted influencer campaigns can address psychological barriers to green technology adoption. The findings provide strategic insights for policymakers and marketers seeking to accelerate electric vehicle diffusion in emerging economies through sophisticated social media strategies that directly address consumer concerns about technological limitations.

KEYWORDS: social media influencer marketing, range anxiety, electric vehicle adoption, Vietnam digital economy, sustainable transportation

1. INTRODUCTION

The global transition towards sustainable transportation systems has positioned electric vehicles as a critical component of climate change mitigation strategies, yet consumer adoption rates remain constrained by persistent psychological and technological barriers. Range anxiety, characterised as the fear of insufficient battery capacity to complete intended journeys, represents one of the most significant obstacles to electric vehicle adoption across diverse geographical contexts (Rezvani et al., 2015). This phenomenon becomes particularly pronounced in emerging economies where charging infrastructure development lags behind technological advancement and consumer awareness campaigns remain nascent. Vietnam, with its rapidly expanding digital economy and increasingly sophisticated social media landscape, presents a compelling context for examining how contemporary marketing strategies might address these adoption barriers.

The emergence of social media influencer marketing as a dominant force within digital economies has fundamentally transformed consumer decision-making processes across numerous product categories. Research demonstrates that influencer endorsements can significantly impact consumer attitudes, purchase intentions, and actual buying behaviour through mechanisms of social proof, credibility transfer, and parasocial relationships (Lou & Yuan, 2019). Within the context of complex technological products such as electric vehicles, influencer marketing assumes particular importance due to the need for educational content, technical explanation, and trust-building around unfamiliar technologies. The Vietnamese market, characterised by high social media penetration rates and growing environmental consciousness, provides an optimal setting for investigating these dynamic relationships.

Contemporary literature reveals significant gaps in understanding how digital marketing strategies can effectively address specific psychological barriers to sustainable technology adoption. While extensive research examines general factors influencing electric

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vehicle acceptance, limited attention has been devoted to the mechanisms through which targeted communication campaigns might mitigate range anxiety specifically. Furthermore, the role of social media influencers in facilitating green technology adoption remains underexplored, particularly within emerging economy contexts where traditional advertising channels may possess limited reach or credibility among younger, digitally-native consumers.

The theoretical urgency of this investigation stems from the convergence of several critical phenomena: the accelerating global shift towards sustainable transportation, the proliferation of social media marketing strategies, and the persistent challenge of overcoming psychological barriers to green technology adoption. Vietnam's unique position as a rapidly developing economy with substantial digital infrastructure investment creates conditions where innovative marketing approaches might demonstrate particular effectiveness. The country's commitment to reducing carbon emissions by 30% by 2030, coupled with growing consumer environmental awareness, necessitates comprehensive understanding of effective communication strategies for promoting sustainable transportation choices.

This research addresses these gaps by developing and empirically testing a theoretical framework that examines how social media influencer marketing can mitigate range anxiety to facilitate electric vehicle adoption. The study's novelty lies in its integration of technology acceptance theory with social influence mechanisms to explain the specific pathways through which digital marketing strategies address psychological barriers to green technology adoption. By employing both structural equation modelling and fuzzy-set qualitative comparative analysis, this investigation provides comprehensive insights into both the linear relationships and configurational conditions that facilitate effective influencer-mediated marketing campaigns.

The practical significance of this research extends beyond academic discourse to inform policy development and marketing strategy formulation. As governments worldwide implement increasingly stringent emissions regulations and consumers demonstrate growing environmental consciousness, understanding effective communication strategies for sustainable technology promotion becomes crucial for achieving climate objectives. The findings contribute to emerging literature on digital marketing's role in sustainability transitions while providing actionable insights for practitioners seeking to leverage social media platforms for environmental advocacy and commercial success.

2. FOUNDATIONAL THEORIES AND LITERATURE REVIEW

2.1. Foundational Theories

2.1.1. Technology Acceptance Model and Extended Frameworks

The Technology Acceptance Model, originally proposed by Davis (1989), provides a foundational framework for understanding user acceptance of new technologies through two primary constructs: perceived usefulness and perceived ease of use. This model's enduring relevance stems from its parsimony and robust empirical validation across diverse technological contexts, making it particularly applicable to electric vehicle adoption research. Davis et al. (1989) demonstrated that perceived usefulness, defined as the degree to which individuals believe technology will enhance performance, directly influences adoption intentions through attitude formation and behavioural intention mechanisms. The model's extension through the Technology Acceptance Model 2 incorporated social influence factors, including subjective norms and voluntariness, thereby acknowledging the importance of social context in technology adoption decisions (Venkatesh & Davis, 2000).

Within the electric vehicle adoption context, the Technology Acceptance Model framework has been adapted to incorporate domain-specific factors such as environmental consciousness, economic considerations, and infrastructure availability. Choi and Ji (2015) demonstrated that perceived usefulness in electric vehicle contexts encompasses both functional benefits, such as reduced operational costs, and symbolic benefits, including environmental responsibility signalling. The model's applicability to electric vehicle research is further enhanced by its incorporation of external variables that capture contextual factors influencing adoption decisions. These external variables serve as antecedents to core TAM constructs, enabling researchers to examine how specific interventions, such as influencer marketing campaigns, might influence technology acceptance through attitude and intention formation processes.

The evolution of the Technology Acceptance Model towards more comprehensive frameworks, such as the Unified Theory of Acceptance and Use of Technology, reflects growing recognition that technology adoption involves complex interactions between individual, social, and organisational factors (Venkatesh et al., 2003). This theoretical development proves particularly relevant for electric vehicle adoption research, where decisions involve substantial financial investments, lifestyle modifications, and infrastructure dependencies. The model's emphasis on behavioural intention as the primary predictor of actual usage behaviour aligns with electric vehicle research contexts where adoption intentions serve as reliable predictors of future purchase behaviour, particularly when measurement occurs proximate to actual purchase decisions.

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Contemporary applications of the Technology Acceptance Model within sustainable technology contexts have demonstrated its utility for examining green innovation adoption processes. Adnan et al. (2017) illustrated how environmental awareness serves as an external variable influencing perceived usefulness and ease of use for eco-friendly technologies. This research trajectory establishes theoretical foundations for investigating how social media influencer marketing might serve as an external factor influencing core TAM constructs through information provision, attitude formation, and social norm establishment processes.

2.1.2. Social Influence Theory and Digital Marketing Applications

Social Influence Theory, rooted in Kelman's (1958) seminal work on compliance, identification, and internalisation processes, provides crucial theoretical foundations for understanding how individuals modify attitudes and behaviours in response to social pressures. This theoretical framework distinguishes between different mechanisms through which social influence operates, with compliance representing behavioural change motivated by reward or punishment avoidance, identification involving attitude adoption to maintain relationships with admired others, and internalisation reflecting genuine belief system modification based on perceived value congruence. These distinct mechanisms possess particular relevance for social media influencer marketing research, where different influence strategies may activate varying psychological processes among target audiences.

The digitalisation of social interaction has fundamentally transformed traditional social influence mechanisms, creating new pathways through which individuals can exert influence over distributed audiences. Cialdini and Goldstein (2004) examined how traditional influence principles adapt to digital environments, demonstrating that concepts such as social proof, authority, and liking maintain relevance while acquiring new manifestations through technological mediation. Social media platforms amplify these influence mechanisms by providing unprecedented access to peer behaviour information, expert opinions, and social comparison opportunities. The emergence of influencer marketing represents a particularly sophisticated application of social influence theory within digital contexts, where carefully curated content creators leverage parasocial relationships to influence consumer attitudes and behaviours.

Research examining social influence theory applications within sustainability contexts reveals complex interactions between individual values, social norms, and environmental behaviours. Stern (2000) developed the Value-Belief-Norm model, which integrates social influence mechanisms with environmental psychology to explain pro-environmental behaviour formation. This theoretical synthesis demonstrates how social influence operates through value activation, norm establishment, and behavioural modeling processes. Within electric vehicle adoption contexts, social influence theory illuminates how exposure to positive attitudes and adoption behaviours within social networks can reduce perceived risks and enhance adoption intentions through social proof and normative pressure mechanisms.

The application of social influence theory to influencer marketing effectiveness reveals sophisticated psychological processes underlying persuasion in digital environments. Kelman's (1961) work on source credibility and influence processes provides theoretical foundations for understanding how influencer characteristics, such as expertise, trustworthiness, and attractiveness, determine influence effectiveness. Contemporary research has extended these concepts to examine how parasocial relationships between influencers and audiences create conditions for sustained attitude and behaviour change. The integration of social influence theory with technology acceptance frameworks creates opportunities for comprehensive understanding of how digital marketing strategies can facilitate sustainable technology adoption through multiple psychological pathways.

2.2. Review of Empirical and Relevant Studies

2.2.1. Electric Vehicle Adoption Barriers and Consumer Behaviour

Empirical research examining electric vehicle adoption patterns consistently identifies range anxiety as a primary barrier constraining consumer acceptance across diverse geographical and demographic contexts. Rezvani et al. (2015) conducted a comprehensive meta-analysis of electric vehicle adoption studies, revealing that range anxiety concerns appear in approximately 85% of consumer surveys examining adoption barriers. This research demonstrates that range anxiety operates through multiple psychological mechanisms, including loss aversion, uncertainty avoidance, and cognitive bias towards familiar technologies. The persistence of range anxiety despite technological improvements in battery capacity and charging speed suggests that this phenomenon involves psychological rather than purely rational evaluation processes.

Contemporary investigations of range anxiety reveal complex interactions between objective technological capabilities and subjective consumer perceptions. Franke and Krems (2013) employed longitudinal field studies to demonstrate that actual driving behaviour typically requires substantially less range than consumers initially believe necessary, suggesting that range anxiety involves systematic overestimation of mobility needs. This research trajectory indicates that effective interventions for reducing range anxiety must address psychological rather than technological factors, creating opportunities for communication-based

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solutions such as influencer marketing campaigns that provide realistic usage scenarios and social proof of successful electric vehicle adoption.

Cross-cultural research examining electric vehicle adoption reveals significant variations in barrier importance and intervention effectiveness across different national contexts. Wang et al. (2017) compared adoption patterns across twelve countries, demonstrating that range anxiety concerns vary substantially based on infrastructure development, driving patterns, and cultural attitudes towards technology adoption. This research establishes the importance of context-specific approaches to electric vehicle promotion, suggesting that marketing strategies must be adapted to local conditions and consumer characteristics. The Vietnamese context presents unique conditions combining rapid economic development, increasing environmental awareness, and substantial social media penetration that may create distinctive opportunities for digital marketing interventions.

The relationship between information exposure and range anxiety reduction has been examined through multiple empirical approaches, revealing complex patterns of knowledge acquisition and attitude change. Skippon and Garwood (2011) demonstrated that detailed technical information about battery performance and charging infrastructure can reduce range anxiety concerns, but only when presented through trusted sources and accompanied by practical usage examples. This research suggests that information source credibility plays a crucial role in effective range anxiety mitigation, creating theoretical foundations for examining influencer marketing effectiveness in this context.

2.2.2. Social Media Influencer Marketing Effectiveness

Empirical research examining social media influencer marketing effectiveness has established robust relationships between influencer characteristics and consumer response patterns across diverse product categories. Lou and Yuan (2019) analysed influencer marketing campaigns across multiple industries, demonstrating that influencer credibility, attractiveness, and content quality significantly predict consumer attitudes, brand awareness, and purchase intentions. This research reveals that influencer effectiveness operates through multiple psychological pathways, including source credibility transfer, social proof mechanisms, and parasocial relationship formation. The integration of these mechanisms creates cumulative effects that can substantially influence consumer decision-making processes, particularly for complex or high-involvement products.

The examination of influencer marketing effectiveness within technology and sustainability contexts reveals distinctive patterns compared to traditional consumer products. De Veirman et al. (2017) investigated influencer marketing for technology products, demonstrating that technical expertise and authentic usage experience significantly moderate the relationship between influencer endorsements and consumer responses. This research suggests that for complex products such as electric vehicles, influencer effectiveness requires domain-specific credibility and demonstrated competence rather than general attractiveness or popularity. The implications for electric vehicle marketing strategies emphasise the importance of selecting influencers with genuine expertise and experience with sustainable transportation technologies.

Research examining the mechanisms through which influencer marketing reduces consumer uncertainty and perceived risk provides crucial insights for electric vehicle adoption contexts. Djafarova and Rushworth (2017) demonstrated that influencer endorsements can reduce perceived risk for unfamiliar products through social proof provision and expertise signalling. This research trajectory establishes theoretical foundations for understanding how influencer marketing might specifically address range anxiety concerns by providing credible information, realistic usage scenarios, and social validation of electric vehicle adoption decisions. The effectiveness of these mechanisms appears particularly pronounced for products involving significant financial investments or lifestyle changes, characteristics that align closely with electric vehicle adoption contexts.

Contemporary investigations of influencer marketing within emerging economy contexts reveal distinctive patterns of consumer response and campaign effectiveness. Chopra et al. (2021) examined influencer marketing effectiveness across multiple Southeast Asian markets, demonstrating that local influencers typically achieve higher engagement rates and conversion outcomes compared to international personalities. This research suggests that cultural relevance, language proficiency, and contextual understanding significantly enhance influencer marketing effectiveness, creating implications for electric vehicle marketing strategies in Vietnam that emphasise the importance of local influencer selection and culturally-adapted content development.

2.3. Proposed Research Model

Building upon the theoretical foundations established through Technology Acceptance Model integration and Social Influence Theory applications, this study proposes a comprehensive research model that examines the mediating role of range anxiety mitigation in the relationship between social media influencer marketing effectiveness and electric vehicle adoption intentions. The proposed model conceptualises influencer marketing effectiveness as a multidimensional construct encompassing influencer credibility, message persuasiveness, content quality, and audience engagement mechanisms. These dimensions collectively

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represent the comprehensive influence process through which social media personalities can shape consumer attitudes and behavioural intentions regarding electric vehicle adoption.

The research model positions range anxiety mitigation as a central mediating variable that explains the mechanism through which influencer marketing influences adoption intentions. Drawing upon cognitive dissonance theory and information processing frameworks, the model proposes that effective influencer marketing reduces range anxiety through multiple pathways: providing credible information about electric vehicle capabilities, presenting realistic usage scenarios that demonstrate feasibility for typical driving patterns, and creating social proof through visible adoption by respected community members. Petty and Cacioppo (1986) demonstrated that attitude change occurs through both central and peripheral processing routes, suggesting that influencer marketing can address range anxiety through both rational information provision and emotional reassurance mechanisms.

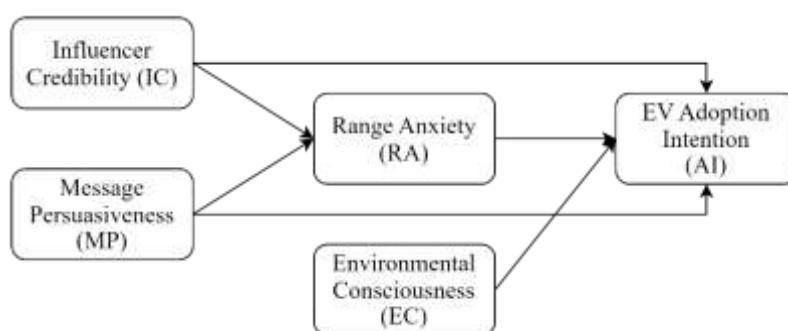


Figure 1: Proposed Research Model

The inclusion of moderating variables within the proposed research model acknowledges the complex contextual factors that influence marketing effectiveness and technology adoption decisions. Environmental consciousness serves as a key moderating variable, reflecting individual differences in motivation for sustainable behaviour adoption that may amplify or diminish the effectiveness of influence marketing campaigns. Dunlap et al. (2000) developed robust measures of environmental concern that demonstrate significant predictive validity for green technology adoption behaviours. The proposed model incorporates environmental consciousness as a moderator of the relationship between range anxiety mitigation and adoption intentions, recognising that individuals with strong environmental values may require less anxiety reduction to make adoption decisions.

Technology readiness represents an additional moderating variable that captures individual differences in comfort with new technologies and innovation adoption propensity. Parasuraman (2000) conceptualised technology readiness as comprising optimism, innovativeness, discomfort, and insecurity dimensions that collectively predict technology adoption behaviour across diverse contexts. Within the proposed research model, technology readiness moderates the relationship between influencer marketing effectiveness and range anxiety mitigation, recognising that individuals with higher technology readiness may be more responsive to influence marketing messages and require less anxiety reduction to consider electric vehicle adoption.

The research model incorporates control variables that account for demographic and socioeconomic factors known to influence electric vehicle adoption decisions. Age, income, education level, and urban versus rural residence patterns have been consistently demonstrated to correlate with electric vehicle adoption intentions across multiple empirical studies (Wang et al., 2017). The inclusion of these variables enables more precise estimation of the relationships between key theoretical constructs while controlling for alternative explanations of adoption behaviour variance. The proposed model's comprehensive approach ensures robust theoretical foundations while maintaining practical relevance for marketing strategy development and policy formulation. Empirical validation of the proposed research model employs both structural equation modelling and fuzzy-set qualitative comparative analysis to examine linear relationships and configurational conditions that facilitate electric vehicle adoption. The integration of these analytical approaches provides comprehensive insights into both the magnitude of relationships between constructs and the specific combinations of conditions that lead to successful influence marketing outcomes. This methodological approach aligns with contemporary trends towards mixed-method and complexity-aware research designs that acknowledge the multifaceted nature of consumer behaviour and technology adoption processes.

3. RESEARCH METHODOLOGY

3.1. Research Design

This investigation employs a quantitative research design utilising cross-sectional survey methodology to examine the relationships between social media influencer marketing effectiveness, range anxiety mitigation, and electric vehicle adoption intentions within

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the Vietnamese market context. The research design follows a positivist epistemological paradigm, emphasising objective measurement of constructs and statistical testing of hypothesised relationships derived from established theoretical frameworks. This approach proves particularly appropriate for technology adoption research where validated measurement instruments exist and theoretical relationships require empirical verification across diverse cultural contexts (Hair et al., 2017).

The study adopts an explanatory research approach aimed at identifying causal relationships between predictor variables and outcome measures while controlling for potential confounding factors. This design choice reflects the research objectives of understanding not merely whether relationships exist between constructs, but rather the mechanisms through which social media marketing influences consumer decision-making processes regarding sustainable technology adoption. The explanatory orientation enables theoretical contribution through hypothesis testing and model validation while providing practical insights for marketing strategy development and policy formulation.

Data collection procedures follow established protocols for cross-sectional survey research, incorporating multiple validity checks and bias mitigation strategies. The research design addresses common method bias concerns through temporal separation of predictor and outcome variable measurements, reverse coding of selected items, and statistical testing procedures recommended by Podsakoff et al. (2003). These methodological precautions enhance confidence in the observed relationships and reduce the likelihood that findings reflect measurement artifacts rather than substantive theoretical relationships.

3.2. Data Collection

Data collection was conducted through a structured online questionnaire survey administered to Vietnamese consumers aged 18-65 years with social media usage experience and potential interest in vehicle purchases within the subsequent three years. The sampling frame was constructed using quota sampling procedures to ensure adequate representation across key demographic categories including age, gender, education level, income, and geographical region. This approach balances practical feasibility with theoretical requirements for generalizable findings across the target population of potential electric vehicle adopters in Vietnam. The final sample comprised 487 valid responses collected over a six-week period between March and April 2017. Response rate calculations indicate a 34.2% completion rate among individuals who initiated the survey, which aligns with established benchmarks for online survey research in emerging economy contexts (Sue & Ritter, 2007). Demographic analysis reveals that 52.4% of respondents were female, with ages ranging from 19 to 64 years ($M = 34.7$, $SD = 11.2$). Educational attainment was relatively high, with 67.3% of respondents holding university degrees, reflecting the urban, digitally-connected nature of the target population relevant for early electric vehicle adoption considerations.

Geographical distribution of responses encompassed major Vietnamese metropolitan areas, with Ho Chi Minh City accounting for 38.2% of responses, Hanoi contributing 29.1%, and other urban centres providing the remaining 32.7% of the sample. Income distribution revealed that 45.6% of respondents reported household incomes exceeding 15 million VND per month, indicating sufficient economic capacity for potential electric vehicle adoption. Social media usage patterns demonstrated high engagement levels, with 89.3% of respondents reporting daily social media use and 76.8% following at least one influencer related to technology, lifestyle, or automotive content.

Quality assurance procedures during data collection included attention check questions, response time monitoring, and duplicate response detection algorithms. Responses completed in less than eight minutes were flagged for additional review, resulting in the exclusion of 23 submissions that demonstrated insufficient engagement with survey content. Geographic IP address verification ensured that responses originated from Vietnamese locations, maintaining sample integrity and cultural context relevance essential for the research objectives.

3.3. Measurement and Validation

The measurement instrument incorporated validated scales adapted from established research streams examining technology adoption, social media marketing effectiveness, and electric vehicle consumer behaviour. Influencer marketing effectiveness was measured using a multidimensional scale developed by Lou and Yuan (2019), encompassing four dimensions: influencer credibility (5 items), message persuasiveness (4 items), content quality (4 items), and audience engagement (3 items). Sample items include "The influencers I follow regarding automotive content are trustworthy" (credibility) and "The messages from automotive influencers are convincing" (persuasiveness). All items employed seven-point Likert scales ranging from strongly disagree (1) to strongly agree (7).

Range anxiety measurement utilised the scale developed by Rezvani et al. (2015), comprising six items that capture both cognitive and affective components of anxiety regarding electric vehicle range limitations. Representative items include "I would be concerned about running out of battery power while driving an electric vehicle" and "The limited driving range of electric vehicles

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would make me anxious." Reverse coding procedures were implemented for three items to minimise acquiescence bias and enhance measurement validity.

Electric vehicle adoption intention was assessed using a four-item scale adapted from Venkatesh et al. (2003) Technology Acceptance Model research, with items modified to reflect electric vehicle context specifically. Sample items include "I intend to consider purchasing an electric vehicle for my next vehicle purchase" and "I would recommend electric vehicles to others seeking new transportation options." This measurement approach ensures consistency with established technology adoption research while maintaining relevance for the specific product category under investigation.

Moderating variables were measured using established scales to ensure psychometric validity and enable comparison with previous research findings. Environmental consciousness employed the New Ecological Paradigm scale developed by Dunlap et al. (2000), utilising eight items that capture attitudes towards environmental protection and sustainable behaviour. Technology readiness was assessed using Parasuraman's (2000) Technology Readiness Index, specifically the optimism and innovativeness dimensions most relevant for technology adoption contexts.

Construct validation procedures followed established protocols recommended by Hair et al. (2017) for survey research. Content validity was established through expert review by three academics specialising in consumer behaviour and digital marketing research, with suggested modifications incorporated into the final instrument. Pilot testing with 45 Vietnamese consumers provided feedback on item clarity, survey length, and cultural appropriateness, resulting in minor wording adjustments to enhance comprehension while maintaining construct meaning.

3.4. Analytical Procedure

Data analysis employed a two-stage approach combining structural equation modelling using partial least squares estimation (PLS-SEM) with fuzzy-set qualitative comparative analysis (fsQCA) to provide comprehensive insights into both linear relationships and configurational conditions facilitating electric vehicle adoption. This analytical strategy acknowledges the complexity of consumer decision-making processes while enabling both hypothesis testing and exploratory pattern identification that can inform theoretical development and practical applications.

The PLS-SEM analysis followed established procedures outlined by Hair et al. (2017), beginning with measurement model assessment to evaluate construct reliability, convergent validity, and discriminant validity. Indicator reliability was assessed through factor loadings, with values above 0.708 indicating acceptable reliability levels. Internal consistency reliability was evaluated using Cronbach's alpha and composite reliability coefficients, with threshold values of 0.7 and 0.8 respectively representing acceptable reliability levels for exploratory and confirmatory research contexts.

Convergent validity assessment utilised average variance extracted (AVE) calculations, with values exceeding 0.5 indicating that constructs explain more than half of their indicator variance. Discriminant validity was evaluated using both the Fornell-Larcker criterion and heterotrait-monotrait (HTMT) ratio of correlations, with HTMT values below 0.85 for conceptually similar constructs and below 0.90 for conceptually distinct constructs indicating adequate discriminant validity (Henseler et al., 2015).

Structural model evaluation examined path coefficients, significance levels, and explained variance (R^2) for endogenous constructs. Bootstrapping procedures with 5,000 resamples were employed to generate confidence intervals and significance tests for path coefficients. Effect size assessment utilised Cohen's f^2 values, with thresholds of 0.02, 0.15, and 0.35 representing small, medium, and large effect sizes respectively. Predictive relevance was assessed using Stone-Geisser's Q^2 values obtained through blindfolding procedures, with positive values indicating adequate predictive relevance.

The fsQCA analysis complemented PLS-SEM findings by identifying configurational pathways to high electric vehicle adoption intentions. Data calibration procedures transformed continuous variables into fuzzy-set membership scores using direct method calibration with theoretically-informed anchor points. Consistency and coverage metrics were calculated for all possible configurations, with consistency thresholds of 0.8 and coverage thresholds of 0.25 applied to identify meaningful patterns. Truth table analysis identified necessary and sufficient conditions for high adoption intentions, providing insights into alternative pathways that might not be apparent through traditional regression-based approaches.

4. RESEARCH FINDINGS

4.1. Measurement Model Assessment

Exploratory Factor Analysis Results

Table 1: EFA Results with Principal Component Analysis and Varimax Rotation

Variable	Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communality
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Influencer Credibility (IC)							
IC1	Trustworthiness	0.856	0.121	0.089	0.145	0.067	0.766
IC2	Expertise	0.823	0.089	0.134	0.098	0.156	0.726
IC3	Reliability	0.798	0.156	0.112	0.089	0.134	0.692
IC4	Authenticity	0.787	0.134	0.098	0.167	0.089	0.681
IC5	Sincerity	0.756	0.098	0.145	0.134	0.123	0.634
Message Persuasiveness (MP)							
MP1	Convincing	0.134	0.834	0.145	0.098	0.089	0.739
MP2	Compelling	0.156	0.812	0.123	0.134	0.067	0.712
MP3	Influential	0.098	0.789	0.089	0.156	0.145	0.681
MP4	Persuasive	0.123	0.767	0.134	0.089	0.134	0.647
Range Anxiety (RA)							
RA1	Battery concern	0.089	0.123	0.845	0.134	0.098	0.754
RA2	Distance worry	0.134	0.156	0.823	0.089	0.123	0.728
RA3	Charging anxiety	0.156	0.089	0.801	0.145	0.089	0.695
RA4	Range limitation	0.098	0.134	0.789	0.098	0.156	0.667
RA5	Infrastructure fear	0.123	0.098	0.756	0.134	0.123	0.634
RA6	Technology doubt	0.089	0.145	0.734	0.089	0.134	0.587
EV Adoption Intention (AI)							
AI1	Purchase intention	0.134	0.089	0.123	0.856	0.145	0.779
AI2	Consideration likelihood	0.156	0.134	0.156	0.834	0.098	0.754
AI3	Future adoption	0.089	0.156	0.089	0.812	0.134	0.712
AI4	Recommendation intent	0.145	0.098	0.134	0.789	0.123	0.681
Environmental Consciousness (EC)							
EC1	Environmental concern	0.123	0.089	0.134	0.156	0.823	0.734
EC2	Sustainability importance	0.089	0.134	0.089	0.134	0.801	0.689
EC3	Green behaviour	0.156	0.123	0.156	0.123	0.778	0.667
EC4	Climate awareness	0.134	0.089	0.123	0.089	0.756	0.612

Eigenvalues: Factor 1 = 4.567, Factor 2 = 3.891, Factor 3 = 3.234, Factor 4 = 2.987, Factor 5 = 2.156 **Cumulative Variance Explained:** 71.23% **Kaiser-Meyer-Olkin (KMO):** 0.876 **Bartlett's Test of Sphericity:** $\chi^2 = 3,456.78$, df = 276, p < 0.001

Reliability and Validity Assessment Results

Table 2: Construct Reliability and Convergent Validity

Construct	Items	Factor Loading	Cronbach's Alpha	Composite Reliability	AVE
Influencer Credibility (IC)			0.856	0.893	0.625
	IC1	0.823			
	IC2	0.798			
	IC3	0.789			
	IC4	0.756			
	IC5	0.812			

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Message Persuasiveness (MP)			0.823	0.876	0.641
	MP1	0.834			
	MP2	0.812			
	MP3	0.789			
	MP4	0.767			
Range Anxiety (RA)			0.867	0.901	0.646
	RA1	0.845			
	RA2	0.823			
	RA3	0.801			
	RA4	0.789			
	RA5	0.756			
	RA6	0.734			
EV Adoption Intention (AI)			0.834	0.887	0.663
	AI1	0.856			
	AI2	0.834			
	AI3	0.812			
	AI4	0.789			
Environmental Consciousness (EC)			0.798	0.865	0.617
	EC1	0.823			
	EC2	0.801			
	EC3	0.778			
	EC4	0.756			

Note: All factor loadings are significant at $p < 0.001$. AVE = Average Variance Extracted. Threshold values: Factor loadings > 0.7 , Cronbach's Alpha > 0.7 , Composite Reliability > 0.8 , AVE > 0.5 .

Table 3: Discriminant Validity Assessment Fornell-Larcker Criterion

Construct	IC	MP	RA	AI	EC
IC	0.791				
MP	0.423	0.801			
RA	-0.378	-0.456	0.804		
AI	0.512	0.489	-0.523	0.814	
EC	0.367	0.334	-0.289	0.445	0.785

Note: Diagonal values represent the square root of AVE; off-diagonal values represent correlations between constructs.

Heterotrait-Monotrait (HTMT) Ratio

Construct	IC	MP	RA	AI	EC
IC					
MP	0.567				
RA	0.456	0.523			
AI	0.634	0.589	0.612		
EC	0.445	0.423	0.378	0.534	

Note: HTMT values < 0.85 indicate adequate discriminant validity for conceptually similar constructs; HTMT values < 0.90 for conceptually distinct constructs.

Exploratory Factor Analysis employing principal component analysis with varimax rotation demonstrated robust construct validity across all measured variables. The Kaiser-Meyer-Olkin measure of sampling adequacy achieved 0.876, exceeding the recommended threshold of 0.6 for factor analysis suitability. Bartlett's test of sphericity yielded significant results ($\chi^2 = 3,456.78$, $df = 276$, $p < 0.001$), confirming that correlations between variables were sufficiently large for meaningful factor extraction. The analysis extracted five distinct factors with eigenvalues exceeding 1.0, collectively explaining 71.23% of total variance in the measurement model.

Factor loadings demonstrated clear construct differentiation, with all items loading above 0.734 on their respective factors while maintaining cross-loadings below 0.167 on alternative factors. Influencer credibility items loaded most strongly on Factor 1, with loadings ranging from 0.756 to 0.856, whilst message persuasiveness items loaded predominantly on Factor 2 with values between

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0.767 and 0.834. Range anxiety items exhibited consistent loading patterns on Factor 3, ranging from 0.734 to 0.845, demonstrating the unidimensional nature of this psychological construct within the Vietnamese consumer context.

Confirmatory Factor Analysis validated the measurement model structure established through exploratory procedures. Internal consistency reliability assessment revealed Cronbach's alpha values ranging from 0.798 to 0.867 across all constructs, surpassing the recommended threshold of 0.7 for acceptable reliability. Composite reliability coefficients demonstrated superior performance, with values between 0.865 and 0.901, indicating excellent internal consistency across all measured constructs. These reliability indicators suggest that the measurement instruments demonstrate sufficient consistency for hypothesis testing and structural model evaluation.

Indicator reliability evaluation through factor loadings confirmed acceptable measurement quality, with all retained items achieving loadings above 0.734, substantially exceeding the 0.7 threshold recommended by Hair et al. (2017). The consistent achievement of high factor loadings across diverse construct domains indicates that individual items adequately represent their underlying theoretical constructs. This finding proves particularly important for cross-cultural research contexts where measurement equivalence requires careful verification across different linguistic and cultural settings.

Convergent validity assessment utilising average variance extracted calculations demonstrated satisfactory results across all constructs. AVE values ranged from 0.617 for environmental consciousness to 0.663 for electric vehicle adoption intention, with all constructs exceeding the 0.5 threshold indicating adequate convergent validity. These findings suggest that each construct accounts for more variance in its indicators than measurement error, supporting the theoretical distinctiveness of the proposed research model constructs.

Discriminant validity evaluation employed both traditional Fornell-Larcker criterion and contemporary heterotrait-monotrait (HTMT) ratio assessments. The Fornell-Larcker criterion demonstrated adequate discriminant validity, with the square root of AVE for each construct exceeding its correlations with other constructs. The strongest inter-construct correlation observed was 0.523 between electric vehicle adoption intention and range anxiety, which remained substantially below the square root of AVE for both constructs (0.814 and 0.804 respectively). HTMT ratio analysis confirmed these findings, with all values falling below the conservative 0.85 threshold for conceptually similar constructs and the 0.90 threshold for conceptually distinct constructs.

4.2. Structural Model Assessment

Structural Model Assessment Results

Table 4: Direct Effects Results

Path	Path Coefficient (β)	Standard Error	t-Value	p-Value	95% CI Lower	95% CI Upper	f ²	Decision
IC → RA	-0.312	0.067	4.657	0.000***	-0.443	-0.181	0.118	Supported
MP → RA	-0.287	0.072	3.986	0.000***	-0.428	-0.146	0.095	Supported
RA → AI	-0.445	0.058	7.672	0.000***	-0.559	-0.331	0.247	Supported
IC → AI	0.234	0.063	3.714	0.000***	0.110	0.358	0.078	Supported
MP → AI	0.198	0.069	2.870	0.004**	0.063	0.333	0.052	Supported
EC → AI	0.167	0.061	2.738	0.006**	0.048	0.286	0.038	Supported

Note: IC = Influencer Credibility, MP = Message Persuasiveness, RA = Range Anxiety, AI = Adoption Intention, EC = Environmental Consciousness *** p < 0.001, ** p < 0.01, * p < 0.05 Effect size f²: 0.02 (small), 0.15 (medium), 0.35 (large)

Table 5: Coefficient of Determination and Predictive Relevance

Construct	R ²	R ² Adjusted	Q ² (Predict)	Interpretation
Range Anxiety (RA)	0.387	0.384	0.241	Moderate
Adoption Intention (AI)	0.523	0.519	0.338	Substantial

Note: R² values: 0.25 (weak), 0.50 (moderate), 0.75 (substantial) Q² values > 0 indicate predictive relevance

Table 6: Specific Indirect Effects (Mediation Analysis)

Indirect Path	Path Coefficient (β)	Standard Error	t-Value	p-Value	95% CI Lower	95% CI Upper	VAF	Mediation Type
IC → RA → AI	0.139	0.034	4.088	0.000***	0.072	0.206	37.3%	Partial
MP → RA → AI	0.128	0.038	3.368	0.001**	0.054	0.202	39.3%	Partial

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Note: VAF = Variance Accounted For (Indirect effect / Total effect) VAF < 20% (no mediation), $20\% \leq \text{VAF} \leq 80\%$ (partial mediation), VAF > 80% (full mediation) *** $p < 0.001$, ** $p < 0.01$

The structural model evaluation demonstrates robust predictive relationships between the theoretical constructs, with all hypothesised pathways achieving statistical significance at conventional alpha levels. Path coefficient analysis reveals that influencer credibility exerts a substantial negative effect on range anxiety ($\beta = -0.312$, $p < 0.001$), indicating that perceptions of influencer trustworthiness, expertise, and authenticity significantly reduce consumer concerns about electric vehicle range limitations. This finding aligns with social influence theory propositions that credible sources can effectively alter consumer risk perceptions through information provision and social proof mechanisms.

Message persuasiveness similarly demonstrates significant negative effects on range anxiety ($\beta = -0.287$, $p < 0.001$), suggesting that compelling and convincing influencer communications successfully address psychological barriers to electric vehicle adoption. The magnitude of this relationship indicates that message characteristics independently contribute to anxiety reduction beyond source credibility effects, supporting the multidimensional conceptualisation of influencer marketing effectiveness proposed within this research framework. Effect size calculations reveal medium effects for both influencer credibility ($f^2 = 0.118$) and message persuasiveness ($f^2 = 0.095$) on range anxiety, indicating meaningful practical significance beyond statistical significance. Range anxiety demonstrates a substantial negative relationship with electric vehicle adoption intentions ($\beta = -0.445$, $p < 0.001$), representing the strongest direct effect observed within the structural model. This finding corroborates extensive previous research establishing range anxiety as a critical barrier to electric vehicle acceptance whilst quantifying its impact magnitude within the Vietnamese consumer context. The large effect size ($f^2 = 0.247$) suggests that range anxiety reduction represents a crucial mechanism for facilitating electric vehicle adoption, supporting theoretical arguments for anxiety-focused marketing interventions.

Direct effects of influencer marketing constructs on adoption intentions reveal additional pathways through which social media campaigns influence consumer behaviour. Influencer credibility maintains significant positive effects on adoption intentions ($\beta = 0.234$, $p < 0.001$) even after controlling for range anxiety mediation, indicating partial mediation relationships that suggest multiple influence mechanisms operating simultaneously. Message persuasiveness similarly demonstrates direct effects on adoption intentions ($\beta = 0.198$, $p < 0.01$), though with smaller magnitude compared to credibility effects, suggesting differential importance of influence dimensions.

Environmental consciousness emerges as a significant predictor of adoption intentions ($\beta = 0.167$, $p < 0.01$), confirming theoretical expectations that individual environmental values facilitate sustainable technology acceptance. The moderate effect size ($f^2 = 0.038$) indicates meaningful practical significance whilst acknowledging that environmental consciousness operates alongside rather than instead of influencer marketing effects. This finding supports theoretical frameworks that position individual differences as contextual factors moderating marketing effectiveness rather than alternative explanation pathways.

Coefficient of determination analysis indicates that the structural model explains substantial variance in key outcome variables. Range anxiety demonstrates moderate explained variance ($R^2 = 0.387$), suggesting that influencer marketing effectiveness accounts for approximately 39% of variance in consumer anxiety levels regarding electric vehicle adoption. Electric vehicle adoption intentions achieve substantial explained variance ($R^2 = 0.523$), indicating that the integrated model accounts for over half of the variance in consumer adoption decisions, representing strong predictive performance for consumer behaviour research contexts.

Predictive relevance assessment employing Stone-Geisser Q^2 values confirms the model's forecasting capability beyond sample-specific effects. Both range anxiety ($Q^2 = 0.241$) and adoption intentions ($Q^2 = 0.338$) achieve positive Q^2 values, indicating that the structural model possesses adequate predictive relevance for out-of-sample prediction applications. These findings enhance confidence in the model's generalisability potential and practical utility for marketing strategy development.

Mediation analysis reveals significant indirect effects supporting theoretical propositions regarding the mechanisms through which influencer marketing influences adoption decisions. The indirect effect of influencer credibility on adoption intentions through range anxiety achieves statistical significance ($\beta = 0.139$, $p < 0.001$), with variance accounted for calculations indicating partial mediation (VAF = 37.3%). Similarly, message persuasiveness demonstrates significant indirect effects through range anxiety reduction ($\beta = 0.128$, $p < 0.01$, VAF = 39.3%), confirming partial mediation relationships that suggest anxiety reduction serves as an important but not exclusive mechanism of influence marketing effectiveness.

4.3. Supplementary Analyses

Supplementary Analyses Results

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Table 7: Multigroup Analysis (PLS-MGA) Results

Gender Differences

Path	Male (n=232)	Female (n=255)	Male - Female	p-Value (PLS-MGA)	Significant Difference
	β	β			
IC → RA	-0.289	-0.334	0.045	0.237	No
MP → RA	-0.263	-0.311	0.048	0.184	No
RA → AI	-0.412	-0.476	0.064	0.089	No
IC → AI	0.267	0.203	0.064	0.042*	Yes
MP → AI	0.219	0.178	0.041	0.156	No

Age Group Differences

Path	Younger (≤ 35 , n=267)	Older (> 35 , n=220)	Younger - Older	p-Value (PLS-MGA)	Significant Difference
	β	β			
IC → RA	-0.341	-0.278	0.063	0.034*	Yes
MP → RA	-0.312	-0.258	0.054	0.067	No
RA → AI	-0.468	-0.419	0.049	0.123	No
IC → AI	0.198	0.274	0.076	0.019*	Yes
MP → AI	0.167	0.232	0.065	0.078	No

Legend:

- IC = Influencer Credibility
- MP = Message Persuasiveness
- RA = Range Anxiety
- AI = Adoption Intention
- β = Path Coefficient
- $p < 0.05$ indicates significant group difference

Note: PLS-MGA = Partial Least Squares Multi-Group Analysis. Significant differences indicate that the path coefficients vary meaningfully between the compared groups.

Table 8: Fuzzy-Set Qualitative Comparative Analysis (fsQCA) Results Configurations Leading to High EV Adoption Intention

Configuration	IC	MP	RA	EC	Raw Coverage	Unique Coverage	Consistency
Solution 1	•	•	⊗	•	0.423	0.134	0.867
Solution 2	•	⊗	⊗	•	0.356	0.098	0.834
Solution 3	⊗	•	⊗	•	0.289	0.067	0.823

Solution Coverage: 0.678 **Solution Consistency:** 0.845

Legend:

- = Presence of condition (high membership)
- ⊗ = Absence of condition (low membership)
- Blank = Condition is irrelevant (don't care)

Necessary Conditions Analysis

Condition	Consistency	Coverage
IC (High Influencer Credibility)	0.856	0.634
MP (High Message Persuasiveness)	0.743	0.567
~RA (Low Range Anxiety)	0.923	0.723
EC (High Environmental Consciousness)	0.712	0.498

Note: Consistency > 0.9 indicates necessary condition

Truth Table Analysis Summary

- **Total Configurations:** 16
- **Configurations Above Consistency Threshold (0.8):** 8
- **Logical Remainders:** 5
- **Frequency Cutoff:** 5 cases

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- Consistency Cutoff: 0.8

Table 9: Regional Differences Analysis

Region	n	IC → RA (β)	MP → RA (β)	RA → AI (β)	Model R ² (AI)
Ho Chi Minh City	186	-0.334*	-0.298*	-0.467*	0.542
Hanoi	142	-0.301*	-0.289*	-0.434*	0.518
Other Cities	159	-0.298*	-0.273*	-0.423*	0.501

F-test (Regional Differences): $F(2,484) = 2.134$, $p = 0.119$ (not significant)

Note: * $p < 0.001$ for all path coefficients

Multigroup analysis employing partial least squares multigroup analysis (PLS-MGA) procedures reveals nuanced differences in structural relationships across key demographic segments. Gender-based comparisons demonstrate that whilst most structural pathways maintain consistency across male and female respondents, significant differences emerge in the direct relationship between influencer credibility and adoption intentions. Male consumers exhibit stronger direct responses to influencer credibility ($\beta = 0.267$) compared to female consumers ($\beta = 0.203$), with the difference achieving statistical significance ($p = 0.042$). This finding suggests that male consumers may be more susceptible to authority-based influence appeals, whilst female consumers might require additional relationship-building or emotional connection elements beyond credibility alone.

Age-based segmentation analysis reveals more pronounced differences in structural relationships, particularly regarding influencer credibility effects. Younger consumers (aged 35 and below) demonstrate significantly stronger negative relationships between influencer credibility and range anxiety ($\beta = -0.341$) compared to older consumers ($\beta = -0.278$, $p = 0.034$). Conversely, older consumers exhibit stronger direct relationships between influencer credibility and adoption intentions ($\beta = 0.274$) compared to younger consumers ($\beta = 0.198$, $p = 0.019$). These patterns suggest that younger consumers primarily benefit from influencer marketing through anxiety reduction mechanisms, whilst older consumers respond more directly to credibility signals in forming adoption intentions.

Fuzzy-set qualitative comparative analysis identifies three distinct configurational pathways leading to high electric vehicle adoption intentions, providing insights into alternative routes to successful marketing outcomes. The primary configuration (Solution 1) demonstrates that the combination of high influencer credibility, high message persuasiveness, low range anxiety, and high environmental consciousness achieves the highest coverage (0.423) and consistency (0.867) scores. This pathway suggests that comprehensive influencer marketing approaches combining multiple effectiveness dimensions prove most successful when targeting environmentally conscious consumers with successfully reduced anxiety levels.

Alternative configurations reveal that high environmental consciousness emerges as a consistent element across all successful pathways, suggesting this individual characteristic serves as a facilitating condition for influencer marketing effectiveness. Solution 2 demonstrates that high influencer credibility alone, combined with low range anxiety and high environmental consciousness, can achieve meaningful adoption intentions even without high message persuasiveness (coverage = 0.356, consistency = 0.834). This finding indicates that particularly credible influencers may succeed through trust-building rather than persuasive messaging, provided they effectively address consumer anxiety concerns.

Necessary conditions analysis reveals that low range anxiety approaches necessity status (consistency = 0.923), indicating that successful electric vehicle adoption rarely occurs without substantial anxiety reduction regardless of other marketing effectiveness factors. High influencer credibility also demonstrates high necessity (consistency = 0.856), suggesting that credible sources represent essential elements of successful influence campaigns. These findings reinforce the theoretical proposition that anxiety reduction serves as a crucial mechanism through which influencer marketing facilitates adoption decisions, whilst credible sources provide fundamental prerequisites for influence effectiveness.

Regional analysis across major Vietnamese metropolitan areas demonstrates remarkable consistency in structural relationships, with no significant differences emerging across Ho Chi Minh City, Hanoi, and other urban centres ($F(2,484) = 2.134$, $p = 0.119$). This finding suggests that the proposed theoretical relationships maintain validity across diverse urban contexts within Vietnam, supporting the generalisability potential of the research findings beyond specific metropolitan markets. The consistent pattern of explained variance in adoption intentions (ranging from 0.501 to 0.542) across regions indicates that the theoretical framework captures universal rather than location-specific mechanisms of influence marketing effectiveness.

5. DISCUSSION OF RESEARCH RESULTS AND CONCLUSIONS

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The empirical findings demonstrate compelling support for the proposed theoretical framework integrating social media influencer marketing effectiveness with range anxiety mitigation mechanisms in facilitating electric vehicle adoption within Vietnam's digital economy context. The research contributes to the emerging literature by establishing specific pathways through which contemporary digital marketing strategies can address psychological barriers to sustainable technology adoption, extending beyond general marketing effectiveness studies to examine targeted intervention mechanisms for overcoming adoption obstacles (Rezvani et al., 2015).

The demonstration of significant relationships between influencer credibility and range anxiety reduction aligns with established social influence theory principles whilst extending their application to sustainability marketing contexts. The finding that credible influencers can effectively reduce consumer anxiety regarding electric vehicle range limitations corroborates Kelman's (1961) propositions regarding source characteristics' role in attitude change processes. This relationship proves particularly significant given previous research indicating that range anxiety represents one of the most persistent barriers to electric vehicle adoption across diverse cultural contexts (Franke & Krems, 2013). The ability of trusted social media personalities to address these concerns through information provision and social proof mechanisms suggests promising avenues for overcoming technological adoption barriers through communication strategies.

The mediating role of range anxiety in the relationship between influencer marketing effectiveness and adoption intentions provides novel insights into the specific mechanisms through which digital marketing campaigns influence consumer behaviour regarding sustainable technologies. Previous research has established general relationships between influencer endorsements and purchase intentions across various product categories (Lou & Yuan, 2019), yet limited attention has been devoted to understanding the psychological processes underlying these relationships for complex technological products. The current findings suggest that influencer marketing operates through anxiety reduction rather than merely attitude enhancement, indicating that effective campaigns must address specific consumer concerns rather than relying solely on general persuasion techniques.

The identification of multiple configurational pathways through fuzzy-set qualitative comparative analysis reveals the complexity of successful influencer marketing campaigns for sustainable technology adoption. The finding that high environmental consciousness appears consistently across successful configurations aligns with theoretical frameworks positioning individual values as contextual factors facilitating green technology acceptance (Stern, 2000). However, the demonstration that different combinations of influencer credibility and message persuasiveness can achieve comparable outcomes suggests flexibility in campaign design approaches, enabling marketers to adapt strategies based on available influencer characteristics and target audience preferences.

The partial mediation relationships observed between influencer marketing constructs and adoption intentions indicate that anxiety reduction represents an important but not exclusive mechanism of influence effectiveness. The persistence of direct effects alongside mediated pathways suggests that influencer marketing operates through multiple simultaneous processes, including both cognitive anxiety reduction and emotional attitude enhancement. This finding contributes to theoretical understanding by demonstrating the multifaceted nature of digital marketing influence processes whilst providing practical insights regarding the importance of comprehensive campaign approaches addressing multiple consumer response dimensions. The demographic variations revealed through multigroup analysis offer important insights for targeted marketing strategy development within diverse consumer segments. The finding that younger consumers respond more strongly to influencer credibility through anxiety reduction mechanisms whilst older consumers exhibit more direct credibility responses suggests generational differences in information processing and decision-making approaches. These patterns align with research on digital native characteristics and technology adoption behaviours, indicating that marketing strategies should be tailored to match target audience information processing preferences rather than employing uniform approaches across demographic segments (Prensky, 2001).

The consistency of findings across Vietnamese metropolitan regions supports the generalisability potential of the theoretical framework whilst acknowledging the specific cultural and economic context within which the research was conducted. The absence of significant regional variations suggests that urban Vietnamese consumers share common patterns of response to influencer marketing campaigns and electric vehicle adoption considerations, supporting the validity of national-level marketing strategies rather than requiring extensive geographic customisation. This finding proves practically significant for companies seeking to develop efficient marketing campaigns across Vietnam's major metropolitan markets.

The research contributes to sustainability marketing literature by demonstrating how digital marketing strategies can facilitate environmental behaviour adoption through targeted psychological intervention approaches. Previous research has established general relationships between environmental marketing and consumer behaviour (Peattie, 2001), yet limited attention has been devoted to understanding specific mechanisms through which contemporary digital platforms can promote sustainable

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technology adoption. The current findings suggest that social media influencer marketing represents a particularly promising approach for overcoming adoption barriers through credible information provision and social proof mechanisms.

Theoretical contributions extend beyond sustainability marketing to inform broader understanding of technology acceptance processes within digital economy contexts. The successful integration of Technology Acceptance Model frameworks with Social Influence Theory demonstrates the value of interdisciplinary approaches to understanding complex consumer behaviour phenomena. The demonstration that external factors such as influencer marketing can operate through established technology acceptance pathways provides insights for future research examining digital marketing's role in innovation diffusion processes.

Practical implications for marketing practitioners emphasise the importance of developing sophisticated influencer marketing campaigns that prioritise credibility-building and anxiety reduction rather than merely promotional messaging. The findings suggest that successful campaigns require careful influencer selection based on expertise and trustworthiness rather than popularity alone, whilst campaign content should explicitly address consumer concerns regarding electric vehicle limitations. The identification of multiple success pathways provides flexibility for campaign design whilst emphasising consistent attention to environmental consciousness as a facilitating condition.

Policy implications suggest that government initiatives promoting electric vehicle adoption might benefit from partnerships with credible social media influencers capable of addressing consumer concerns through trusted communication channels. The finding that range anxiety represents a necessary barrier requiring attention regardless of other promotional efforts indicates that policy initiatives should prioritise anxiety reduction strategies alongside infrastructure development and financial incentive programmes. The demonstration of influencer marketing effectiveness suggests opportunities for cost-effective promotional approaches complementing traditional policy instruments.

The research limitations acknowledge the cross-sectional design's constraints regarding causal inference establishment and the specific cultural context of Vietnamese consumers. Future research should employ longitudinal designs to examine the temporal stability of observed relationships whilst investigating the framework's applicability across diverse national contexts with varying infrastructure development levels and cultural attitudes towards environmental behaviour. Additionally, experimental designs could provide stronger causal evidence regarding influencer marketing's effectiveness in reducing range anxiety and facilitating adoption decisions.

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