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The Intrinsic Motivation Towards the Purchase of an Electric Vehicle Using Social Media as an Information Channel

Nishanta Kumar[1], Dr. A. Gopinath[2]

[1]Ph.D Research Scholar, Department of Business Administration, Annamalai University, India
[2]Assistant Professor, Department of Business Administration, Thiru A Govindasamy Govt Arts College, Tindivanam, Tamil Nadu, India

Intrinsic motivation may be defined as the strong urge from within. Many people worldwide have this element, which inspires them to adopt change for a better tomorrow. This paper is an honest attempt to present a few facts about why some people are naturally inclined to experiment with something new. These inner attributes are independent of age, sex, religion, and demographic variables. Few innovations were made by mankind ahead of time. Electric vehicles certainly fall into that category. The first Electric Vehicle was introduced in the year 1830 but after nearly 60 years the first practical EV was invented. It was only now in the 21st century due to climate change and major environmental issues across the Globe, that each country started seeing a surge of demand for Electric vehicles compared to vehicles that use fossil fuel. The use of social media to create such awareness must be given credit. The world has become much smaller and the information flow duration is becoming shorter day by day. We are living in an era of free information and sometimes much more than the required data. This study is trying to understand the role of Social media in our lives with respect to purchasing decisions. The object under study is an Electric Vehicle.

Keywords: Consumer Decision Making Process, Electric vehicle, Social Media.

1. Introduction

Much research has shown that motivation is related to various outcomes such as curiosity, persistence, learning, and performance. One useful perspective is that behavior can be intrinsically motivated, extrinsically motivated, or unmotivated (Deci and Ryan, 1985, 1991).

1.1 Intrinsic Motivation:

Intrinsic Motivation is a fascinating psychological construct that goes beyond the surface-level understanding of what drives us to act. It's not about the external rewards or the proverbial carrot on a stick; it's about the deep-seated, internal rewards that fuel our very essence. Intrinsic motivation is the drive to engage in an activity because it's inherently satisfying or enjoyable, rather than for external reward or pleasure. Intrinsic factors are the unsung heroes behind our most motivated behaviours. They're the catalysts for our exploratory activities, whether it's diving into a new book, painting a canvas, or solving a complex mathematical equation.

Key Insights:

- Intrinsic motivation is driven by internal rewards, not external ones.
- It plays a crucial role in achieving an optimal level of focus and performance.
- Flow theory provides a framework for understanding how intrinsic factors influence our engagement in exploratory activities.

One of the objectives of this study is to understand the relationship of intrinsic motivation an individual has with his or her decision-making towards the purchase of an electric vehicle. Intrinsic motivation is related to self- determination theory, which suggest that people become self-determined when their needs for competence, connection and autonomy are met.

1.2 Electric Vehicle

At the core of every electric vehicle is its electric motor and the battery that powers it. Unlike traditional cars that rely on an internal combustion engine, electric vehicles use an electric motor that converts electrical energy from the battery into mechanical energy to drive the wheels. The efficiency of an electric motor is one of the primary reasons EVs offer lower operating costs and improved fuel efficiency when compared to gasoline-powered vehicles.

The most common type of electric motor used in EVs is the permanent magnet synchronous motor (PMSM), which operates with the help of magnets and electrical current. Electric motors in EVs are highly efficient, with typical efficiency ratings between 85-90%, much higher than the 20-30% efficiency found in traditional internal combustion engines.

Electric vehicles offer numerous benefits that make them an attractive alternative to traditional internal combustion engine vehicles. These benefits extend across environmental, economic, and societal domains, offering compelling reasons for the increasing global adoption of EVs.

The three major benefits of Electric Vehicle are Environmental Benefits, Economic Benefits and Performance benefits.

Electric vehicles also have the potential to revolutionize transportation in other ways. Autonomous electric vehicles, for example, could reshape how people use and interact with transportation systems, making mobility more accessible, efficient, and sustainable. Vehicle-to-grid (V2G) technology, which allows EVs to store and return electricity to the grid, could help balance demand and supply, contributing to grid stability and renewable energy integration.

1.3 Consumer decision-making process

Understanding the stages of the consumer decision-making process is vital for marketers to intervene at critical points.

The Consumer Decision-Making Model

The decision-making process can be broken into several stages:

- Problem Recognition: The consumer realizes a need or problem.
- Information Search: The consumer gathers information about available solutions.
- Evaluation of Alternatives: The consumer compares various options.
- Purchase Decision: The consumer makes a final selection.
- Post-Purchase Behavior: The consumer evaluates their choice, which can lead to satisfaction or regret.

1.4 Social Media Uses

Social media is a new search engine. It helps people to share information, opinions, and ideas with one another. The feedback cycle is very small at the social media compared to the traditional methods of communication. The validation is also almost instantaneous at the social media. Close to 46% gen Z uses the social media for information search.

2. Literature review and hypothesis Development

A huge wealth of knowledge is available through past studies and a literature review helps us to connect our topic with those of other researchers with similar interests. It allows us to gain more familiarity with the topic, come up with a valid theoretical framework and a proper research methodology.

One of the keys to getting relevant literature is to identify the topic. The research problem and objectives play an important role in getting the right literature from the huge content available at our disposal. Ideally, there must be answers through past research for the similar research problem you are trying to solve.

Another important parameter to measure the importance of literature is to look at the number of times an article has been cited in different research articles. A high number of citations means that many researchers have found value in that article and hence could be potentially credible and delivering source for our study.

Objective of the study:

➢ To understand the impact of intrinsic motivation towards the purchase of an Electric Vehicle

➢ To study the influence of social media on the purchase decision of electric vehicles by the demographic profile of the respondents

Research Methodology:

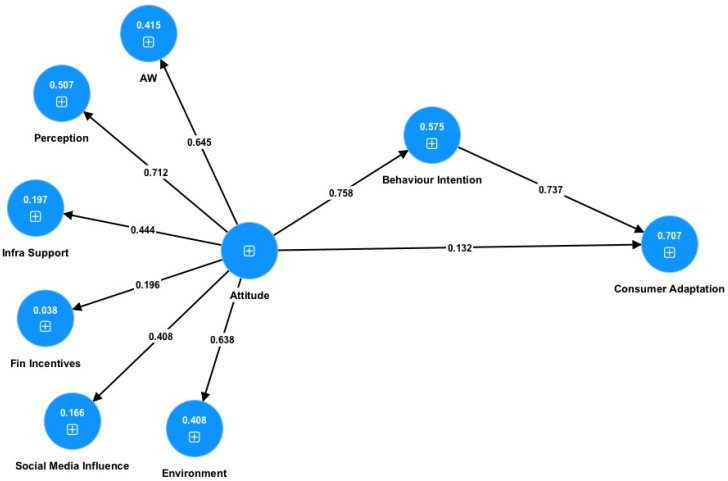
Research is the systematic, in-depth study or search of a particular topic, subject, or area of investigation, backed by the collection, compilation, presentation, and interpretation of relevant details or data.

Research design: Descriptive research – This research is a type of research design that is used to describe or summarize particular phenomena, situation or group of individual. It involves collecting data to provide a detail and accurate picture of the topic under investigation.

Research plan:

- Data Source: Primary
- Research Approach: Survey method
- Research Instrument: Questionnaire

2.1 PLS-SEM Estimate



2.2 Table Path Coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Attitude -> AW	0.645	0.647	0.039	16.324	0.000
Attitude -> Behaviour Intention	0.758	0.758	0.029	26.569	0.000
Attitude -> Consumer Adaptation	0.132	0.132	0.062	2.125	0.034
Attitude -> Environment	0.638	0.642	0.034	18.908	0.000
Attitude -> Fin Incentives	0.196	0.204	0.063	3.123	0.002
Attitude -> Infra Support	0.444	0.445	0.051	8.695	0.000
Attitude -> Perception	0.712	0.713	0.029	24.338	0.000
Attitude -> Social Media Influence	0.408	0.411	0.046	8.872	0.000
Behaviour Intention -> Consumer Adaptation	0.737	0.736	0.051	14.525	0.000

Reliability Analysis Table 2.2.a: Awareness

Scale Reliability Statistics			
	Mean	SD	Cronbach's alpha
Scale	3.816	0.854	0.762

Attitude towards the awareness was assessed by recording the response of respondents about the salient features of intrinsic motivation such as perception, environment concerns and behavior intentions. The reliability of the scale used for measuring attitude was checked with the help of Cronbach's alpha whose value was found 0.762 which is more than 0.7 indicating the reliability of the scale.

1. Attitude -> Awareness

- H_0: Attitude does not significantly affect Awareness (AW).
- H_1: Attitude significantly affects Awareness (AW).

Beta Value (Original Sample):0.645. P-Value: 0.000. Since the p-value is less than 0.05, we reject H_0 and conclude that Attitude significantly affects Awareness. The positive beta value indicates that a higher Attitude leads to higher Awareness.

Inference: The scale reliability statistics for the survey indicate a mean score of 3.816 with a standard deviation of 0.854. The Cronbach's alpha coefficient is 0.762, which suggests a good level of internal consistency for the scale.

Reliability Analysis Table 2.2.b: Social Media Influence

Scale Reliability Statistics			
	Mean	SD	Cronbach's alpha
Scale	3.05	0.748	0.827

Attitude toward social media uses was assessed by recording the responses of respondents about the salient features of social media such as user interphase, design, notification, etc. The

reliability of the scale used for measuring attitude was checked with the help of Cronbach's alpha whose value was found 0.827 which is more than 0.7 indicating the reliability of the scale.

2. Attitude -> Social Media Influence

- H_0: Attitude does not significantly affect Social Media Influence.
- H_1: Attitude significantly affects Social Media Influence.

Beta Value (Original Sample): 0.408. P-Value: 0.000. The p-value is less than 0.05, so we reject H_0. Attitude significantly affects Social Media Influence. The positive beta value indicates that a higher Attitude leads to greater Social Media Influence.

3. Conclusion:

There is a meaningful contribution of self-awareness towards the adoption of electric vehicles. The majority of the respondents are a bit concerned about ongoing Geopolitical issues like climate change, global warming, and a few more. The descriptive statistics for the Environmental Concern scale reveal a high mean score of 4.084 with a standard deviation of 0.717, indicating that respondents generally exhibit strong concern for environmental issues. Among the items, ENV01 (Concerned about the environmental pollution in India and its impact on health) has the highest mean of 4.258, reflecting the greatest level of concern. Respondents are willing to go the extra mile and adopt Electric vehicles and consider this as their contribution to society, nation, and eventually to mankind. However, the study also shows there is plenty of work to be done. The infrastructure support, government initiatives and policies are not reaching the majority of the people. The descriptive statistics for the Attitude scale show a mean score of 3.593 with a standard deviation of 0.887, indicating a generally positive attitude among respondents. Among the items, ATT03 (Buying Electric Vehicle is a positive step) has the highest mean of 3.667, suggesting it represents the most favourable attitude.The universe of this study was Karnataka state in India, hence the awareness level was above average. This may not be true for other Indian cities.

Social media has also played a major role in bringing in the awareness of Electric Vehicle in Karnataka. The majority of the respondents have first-hand information on Electric vehicles and many are considering to buy in the future. These item-rest correlations reflect the strength of each item's relationship with the overall scale score. All items show relatively high correlations, indicating strong alignment with the scale's construct. SOC02 (People perceive that I am good if I drive an electric vehicle) has the highest correlation at 0.668, followed closely by SOC01 (People are impressed that I use electric vehicle) at 0.658.They use social media as the information is available in detail and in length at almost no cost.

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