A study on effect of eWOM information on purchase intention for electric vehicles

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Abstract---Purpose- Today, customers play an active role in creating, generating, and sharing the electronic Word of mouth (eWOM). As a result, attracting customers through recommendations and WOM has become an important goal for businesses. In addition, Social Networking Sites (SNSs) have created valuable opportunities for eWOM. As a result, the development of Electric Vehicles (EVs) is essential. This study shows how eWOM information affects customers' purchase intention for EVs on social networking sites. Design/methodology/approach- This study employed the Information Adoption Model (IAM). Data was collected using a self-administered questionnaire from 266 respondents in Hyderabad and Secunderabad to evaluate the proposed model using SmartPLS software. Findings – The findings show that information quality and Credibility positively affect the usefulness of the information. Furthermore, information adoption determines purchasing intentions, with information usefulness as a predictor for adoption. Research limitations/implications- This study aims to fill a gap in the research on SNSs, specifically in the context of eWOM information. The study proposes the IAM model and statistically confirms the hypothesized relationship. This study can be used as a platform for further studies. Practical implications- This study is one of the few studies focusing on the influence of eWOM information on electric vehicles, especially in social networks. In addition, this study contributes to the empirical research of purchase intention in an IAM.
Keywords---electric vehicles, information quality, information credibility, needs information, attitude towards information, purchase intention.

Introduction

Nowadays, consumers increasingly turn to the internet to look for information about products and services, compare different brands, and learn about other consumers’ experiences with brands (Pentina et al., 2018). Furthermore, online communication is rapidly expanding through social media, websites, blogs, and others, generating interest in traditional and electronic Word of mouth (Hussain et al., 2017; Yang, 2017). Therefore, companies can benefit from eWOM by identifying the factors that motivate their consumers to share their opinions and analyzing the impact of their comments (Cantallops & Salvi 2014). Although customers traditionally used to share experiences in person with a limited number of social contacts, nowadays, social media allow customers to produce thousands of messages per minute on social networks and share their opinions, reviews, and experiences with a much larger audience (Zhang et al., 2017). Therefore, a social media platform is the best venue for eWOM. Furthermore, because of the reduction in anonymity, eWOM information has grown more reliable and trustworthy. Furthermore, customer purchase intentions are impacted by product social media conversations (Samoggia et al., 2020). In social media, eWOM information can appear in a variety of forms. Quality (a proxy for the central route), Credibility (a representative for the peripheral route), information usefulness, and information adoption (Erkan and Evan 2016) are the four components of the Information Adoption Model (Sussman and Siegal 2003). This study explores the purchasing intentions of electric vehicles (EVs). Electric vehicles (EVs) are economical to maintain. Electric vehicles are powered by batteries and energy. It’s important since it uses renewable energy. Renewable energy sources include solar, hydro, biomass, thermal, and wind. This study examines eWOM’s influence on customers’ purchase intentions on Facebook, Instagram, and Youtube. Positive and negative consumer information behaviours are key to forecasting consumer decisions and eWOM elements. As a result, this research examines the purchase intention of customers of Electric vehicles (EVs) through an indirect path of information usefulness and adoption by combining predictors from information characteristics and consumers’ behaviors toward information. In addition, this study investigates the extended Information Acceptance Model (IACM) and electric vehicle purchases intention of electric vehicles.

A review of the literature and theoretical discussion

Electronic Word of mouth (eWOM) using social media

eWOM on SNSs has attracted the attention of various scholars due to its impact on influencing consumers’ purchase intentions (Sokolova & Kefi 2020). Businesses widely accept SNSs as an appropriate platform for eWOM (Felix et al., 2017; Erkan & Evans 2018). Consumers are increasingly looking to social networking sites for information (Schivinski and Dabrowski. 2016). User views
and experiences on social networking sites have become one of the consumers’
most influential information sources, especially company-generated information
(Rita et al., 2019; Pourfakhimi, S. et al., 2020). Internet users can connect with
their networks using written text, images, or videos by forwarding posts or
sharing them through other mobile applications on social media platforms (Moran & Muzellec, 2017). As a result, Word of mouth (WOM) has always been
considered one of the most influential factors affecting customer purchasing
decision making. Similarly, as more people share their views on social media,
eWOM has become more influential in affecting consumers’ purchasing intention
(Cham et al., 2021; Kim, M. et al., 2022). Consumers have effectively transformed
from passive observers to active participants due to social media platforms (Kim,
M. et al., 2022). However, EWOM may be created unknowingly, especially when
customers show their product preferences through network interactions like
liking, sharing, and posting. Information about advertisements may also be
shared and posted on brands’ official accounts on social networking sites (Cham
et al., 2021). In general, either a marketer or a consumer may create new content
for social media networks, and both can quickly spread among users (Nadeem,
W. et al., 2015). It’s clear that some information is shared quickly and reaches a
larger audience, while others generate negative reactions (Erkan & Evans, 2016).
Furthermore, this showed that the impact of information changes from one
person to another, with the same content-generating various situations among
receivers (Ismagilova, E. et al., 2020). Consumers who have used eWOM will
thoroughly evaluate the information before adopting it (Erkan & Evans 2016).
This study used the Information Adoption Model (IAM) developed by Sussman &
Siegal (2003) to investigate better the intention of consumers’ adoption of
information on a social media platform for decision-making in purchasing Electric
Vehicles (EVs).

**Information Adoption Model (IAM)**

Sussman & Siegal (2003) developed the Information Adoption Model (IAM) based
on the dual-process model of informational influence to understand better how
consumers absorbed the information they obtained (Erkan & Evans 2016). IAM
can successfully narrow the scope of the research information adoption process.
It suggests that consumers can be influenced by a message in two ways: the
argument quality as the central route. It can explain how people adopt
information and change their intentions using computer-mediated
communication platforms (Erkan, I., & Evans, C. 2016) IAM is a better match for
eWOM studies. Even though the IAM was the most commonly accepted method in
the study, Erkan I. & Evans C. (2016) stated that the model focuses on the
characteristics of information and the influence of eWOM on consumer purchase
intention based on the consumers’ behavior toward eWOM information.
Researchers commonly use it to investigate the relationship between eWOM and
purchase intention (Lam, A. Y. et al., 2019).
Research model and hypotheses development

Information quality

Information quality and Credibility have grown more important for consumers as social media users have better access to the information (Erkan & Evans 2016). Quality of information is defined as the fitness to use the information provided in influencing customers' purchase intention (Ismagilova et al., 2020). The dimension of accuracy, completeness, and timeliness in giving information that meets users' expectations is central to information quality (Leong et al. 1. 2021). For example, Park, D. H. et al. (2007) discovered a strong positive relationship between Quality of information and purchase intention. Furthermore, information quality, which is influenced by eWOM, has shown a positive relationship with information usefulness, indirectly influencing purchase intent (Leong et al., 2021).

H1: EWOM information quality is positively related to eWOM information usefulness.

Information credibility

The first aspect of a person's persuasion process is information credibility, which is a trustworthy source (Ismagilova et al. 2020). They appreciate information from credible sources and encourage information sharing as the first step in the individual persuasion process (Erkan & Evans 2016). The Credibility of information strongly influences consumers' decision-making, and recent studies have revealed a positive link between information credibility and customer purchase intention, mainly when the information is valuable and adaptable (Leong et al., 2021). As a result, this study found that the usefulness of eWOM information is related to its Credibility.

H2: EWOM information credibility is positively related to eWOM information usefulness.

Information Usefulness and Information adoption

Yeap et al. (2014) define information usefulness as "new useful information by providing supporting views to individuals' perceptions in enhancing their
performance.” Previous research considered information usefulness the important indicator of information adoption and purchase intention (Sussman & Siegal 2003; Erkan & Evans 2016). When an adequate amount of information is deemed useful, social media users who engage in eWOM information have more intention for information adoption (Arumugam 2016; Erkan & Evans 2016). In the case of eWOM information, it is obtained from other users who have prior experience purchasing similar products; highlight the importance of information adoption based on its usefulness. Research also shows a positive link between the usefulness of information and purchase intention (Cheung 2014; Dachyar and Banjarnahor 2017).

*H₃: Usefulness of EWOM information is positively related to eWOM information adoption.*

**Information adoption and Purchase intention**

Information adoption can explain how individuals adopt information and, as a result, modify their intentions and behaviors within the computer-mediated communication platforms (Wang 2016). Consumers’ sharing of information, opinions, and experience has increased due to social media, which has served as a useful information source for all those searching and adopting information when it is found to satisfy the social media users’ needs. As a result, information adoption was determined to be one of the determinants affecting customers’ purchasing intention by Cheung & Thadani (2012). Furthermore, Sánchez Torres et al. (2018) found that information adoption on social media influences an individual’s purchase intention. Again, there is a positive relationship between eWOM information adoption and purchase intention.

*H₄: Adoption of EWOM information is positively related to customers’ purchase intention.*

The following research framework has been derived based on all the proposed hypotheses, as shown in Fig. 2.

![Fig.2. Model of the study](image-url)
Methodology

Measures and Data Collection

A self-administered online questionnaire was distributed to the respondents in January 2021 for four weeks. The respondents for this study were chosen by using a purposive sampling technique. This study’s respondents are customers of green products of Hyderabad and Secunderabad and who are also active on social media. A pilot study with 30 respondents was done at the start of data collection to ensure respondents could understand the scales’ questions. After that, collected data as per sample size 266. 266 questionnaires were used for data analysis after screening for the questionnaires with straight-lining patterns. In addition, they performed Partial least squares-structural equation modeling (PLS-SEM 3.2.9) to analyze data collected using SmartPLS2.0 software to test the model and hypotheses. The tests include a measurement model assessment and a structural model evaluation. Used Reliable resources to design the measurements of the variables: four items were used for Quality of information (Park et al., 2007; Erkan & Evans, 2018). In addition, four items were for the Credibility of information (Erkan & Evans, 2016). In addition, I am using three items for information usefulness (Erkan & Evans 2018; Gökerik et al. 2018). Four items were used for information adoption (Erkan & Evans, 2018) and four items for purchasing intention (Erkan & Evans, 2016). Each item was measured by using a five-point Likert scale, where (1) indicated strongly disagree, (2) indicated disagree, (3) indicated neutral, (4) indicated agree, and (5) indicated strongly agree.

Data Analysis and findings

We used the partial least square (PLS) structural equation modeling technique (SEM) for data analysis. According to Table 1, male respondents represented 46.61% of the total, while female respondents represented 53.38%. The majority of those who responded were between the ages of 20 and 24 (35.33%). Most respondents (85.71) purchased two-wheeler electric vehicles. Furthermore, most responders spend 1 to 4 hours every day on social media (47.36%). Most respondents (40.97 %) use Youtube to get eWOM information to purchase EVs.

<table>
<thead>
<tr>
<th>Demographic variables</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>124</td>
<td>46.61</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>142</td>
<td>53.38</td>
</tr>
<tr>
<td>Age</td>
<td>20–24 years old</td>
<td>94</td>
<td>35.33</td>
</tr>
<tr>
<td></td>
<td>25–29 years old</td>
<td>82</td>
<td>30.82</td>
</tr>
<tr>
<td></td>
<td>30–34 years old</td>
<td>45</td>
<td>16.19</td>
</tr>
<tr>
<td></td>
<td>35–39 years old</td>
<td>21</td>
<td>7.8</td>
</tr>
<tr>
<td></td>
<td>40 and above</td>
<td>24</td>
<td>9.2</td>
</tr>
<tr>
<td>Social Networking</td>
<td>Face book</td>
<td>74</td>
<td>27.81</td>
</tr>
<tr>
<td></td>
<td>Instagram</td>
<td>83</td>
<td>31.20</td>
</tr>
</tbody>
</table>
Convergent and discriminant validity is checked as part of the measurement model’s assessment. The Average Variance Extracted (AVE) results in Table 2 show that all variables’ values are more than 0.5, indicating convergent reliability. If the value of Average Variance Extracted (AVE) exceeds 0.5, a loading value of 0.5 is acceptable (Byrne 2016). As a result, indicator reliability is achieved.

Table 2: Convergent validity and reliability

<table>
<thead>
<tr>
<th>Validity</th>
<th>Construct</th>
<th>Item</th>
<th>Outer loading</th>
<th>AVE</th>
<th>CR</th>
<th>Cronbach's alpha</th>
<th>rho_A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ADI1</td>
<td>0.8</td>
<td>0.669</td>
<td>0.89</td>
<td>0.835</td>
<td>0.836</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADI2</td>
<td>0.818</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADI3</td>
<td>0.843</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADI4</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CI1</td>
<td>0.889</td>
<td>0.692</td>
<td>0.872</td>
<td>0.792</td>
<td>0.842</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CI2</td>
<td>0.715</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CI3</td>
<td>0.822</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PI1</td>
<td>0.803</td>
<td>0.689</td>
<td>0.898</td>
<td>0.849</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PI2</td>
<td>0.816</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PI3</td>
<td>0.845</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PI4</td>
<td>0.855</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>QI1</td>
<td>0.856</td>
<td>0.693</td>
<td>0.900</td>
<td>0.852</td>
<td>0.856</td>
<td></td>
</tr>
<tr>
<td></td>
<td>QI2</td>
<td>0.817</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>QI3</td>
<td>0.866</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>QI4</td>
<td>0.789</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UI1</td>
<td>0.811</td>
<td>0.689</td>
<td>0.898</td>
<td>0.85</td>
<td>0.855</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UI3</td>
<td>0.843</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UI4</td>
<td>0.799</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UI2</td>
<td>0.865</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The HTMT Ration (Heterotrait-Monotrait) Ratio of Correlations data is shown in Table 3. Discriminant validity is assessed by using the HTMT criterion. If the HTMT value is below 0.90, discriminant validity can be established Henseler et al., (2015).
Table 3 Heterotrait-Monotrait (HTMT) ratio of correlations

<table>
<thead>
<tr>
<th></th>
<th>ADI</th>
<th>IC</th>
<th>IP</th>
<th>IQ</th>
<th>IU</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC</td>
<td>0.730</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP</td>
<td>0.811</td>
<td>0.728</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IQ</td>
<td>0.672</td>
<td>0.810</td>
<td>0.686</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IU</td>
<td>0.753</td>
<td>0.789</td>
<td>0.837</td>
<td>0.518</td>
<td></td>
</tr>
</tbody>
</table>

The path coefficient analysis is part of the structural model assessment, and the results are shown in Table 4. The usefulness of information is positively related to information quality ($\beta=0.322$, $p<0.05$) and Credibility ($\beta=0.467$, $p<0.01$). As a result, H1 and H2 are supported. Information usefulness ($\beta=0.640$, $p<0.01$) shows a significant positive relationship with information adoption. While Information adoption ($\beta = 0.314$, $p<0.01$) is positively related to purchase intention, H3 and H4 are thus supported.

Table 4 Path coefficient and hypothesis testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path</th>
<th>Path Coefficient</th>
<th>SE</th>
<th>t-statistics</th>
<th>p-values</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>QI -&gt; UI</td>
<td>0.322</td>
<td>0.138</td>
<td>2.342</td>
<td>0.019</td>
<td>supported</td>
</tr>
<tr>
<td>H2</td>
<td>CI -&gt; UI</td>
<td>0.467</td>
<td>0.113</td>
<td>4.128</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H3</td>
<td>UI -&gt; ADI</td>
<td>0.640</td>
<td>0.066</td>
<td>9.696</td>
<td>0.000</td>
<td>supported</td>
</tr>
<tr>
<td>H4</td>
<td>ADI -&gt; PI</td>
<td>0.314</td>
<td>0.122</td>
<td>2.589</td>
<td>0.001</td>
<td>supported</td>
</tr>
</tbody>
</table>

The model's effect size, coefficient of determination, and predictive relevance are summarized in Table 5. The effect size ($f^2$) is used to assess the impact of variables on the dependent variable. Information usefulness is positively influenced by QI and CI. With a value of 0.213, QI and CI have a moderate effect on the usefulness of the information. However, because the value is more significant than 0.35, the impact of information usefulness on information adoption is significant. With a value of 0.695, information usefulness has a large effect on information adoption. Information adoption shows a medium effect on purchase intention as the value is 0.297.

According to $R^2$, the explanatory variables explained 49.4% of the variations in information usefulness. Information usefulness contributed to 41% of the variance in the adoption of information. Information adoption contributed to 59.3% of the variance in purchase intention (as reported by Wang and Yang, 2008). Because all $Q^2$ values are higher than 0, all predictors have predictive importance for endogenous information. Table 5 show the degree of prediction error regarding information usefulness, adoption, and purchasing intention. The PLS-SEM model may be examined because all values of $Q^2$ predicted were greater than zero. The root means square error (RMSE) was used for the comparison.
Table 5: PLS predicts assessment of variables

<table>
<thead>
<tr>
<th>Endogenous latent constructs</th>
<th>R²</th>
<th>R² Adjusted</th>
<th>Q²</th>
<th>Q² _predict</th>
<th>RMSE</th>
<th>F²</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADI</td>
<td>0.41</td>
<td>0.404</td>
<td>0.437</td>
<td>0.368</td>
<td>0.816</td>
<td>0.695</td>
</tr>
<tr>
<td>PI</td>
<td>0.593</td>
<td>0.585</td>
<td>0.468</td>
<td>0.363</td>
<td>0.843</td>
<td>0.297</td>
</tr>
<tr>
<td>UI</td>
<td>0.494</td>
<td>0.478</td>
<td>0.472</td>
<td>0.34</td>
<td>0.86</td>
<td>0.213</td>
</tr>
</tbody>
</table>

**Discussion**

To this end, it was tried to provide a comprehensive model by developing the Information Adoption Model (IAM) of Sussman and Siegal (2003). Quality of information has a positive relationship with information usefulness, according to Xue et al. (2018). Because users may access the information via eWOM, the Quality of the information is an issue. Consumers find the information useful if the Quality of the information meets their needs. Consumers find helpful information if the Quality of the information meets their needs. The hypothesis (H₁) indicated that the Quality of information positively affects the usefulness of eWOM information on Social networking sites. Information usefulness is also positively connected to information creditability. Park et al.'s (2007) study support the findings. As a result, customers are convinced by credible information provided via eWOM. Knowledge transfer is enabled if the information is obtained from a credible source, becoming an early component in the individual persuasion process (Erkan and Evans 2016). This is to Wan and Shen's (2015) conclusion that there is a significant relationship between Quality and perceived usefulness. The hypothesis (H₂) indicated that the creditability of information positively affects the usefulness of eWOM information on Social networking sites. If users believe eWOM information is valuable, they will participate. The hypothesis (H₃) showed that the usefulness of information positively affects the adoption of eWOM information on SNSs. This study suggests that information adoption is positively connected to purchase intention, in line with Erkan and Evans' findings (2016). As a result, users who adopt eWOM information via social media are more likely to form a purchase intention, especially if the information has been shared among friends (Erkan & Evans 2018). Furthermore, the hypothesis (H₄) of the research showed that information adoption positively affects the customer’s purchase intentions for EVs on social media platforms.

**Practical implications**

The findings of this study are helpful for managers, marketers, and retailers because they provide a framework for understanding the effect of eWOM information in social networks on customer purchase intentions. Because of their large user base, social networking sites are important for marketers. These SNSs are considered the ideal platform for WOM information. As the eWOM information perspectives such as information quality and Credibility are the determinants of information usefulness, the practitioners should enhance the Quality, Credibility, and relevancy of the reviews online for their new products. Regular monitoring of the online reviews can be used to achieve this objective. Alternatively, businesses can create virtual spaces on their websites where customers can leave comments and share their thoughts (Vallejo et al., 2015).
Conclusion

The impact of various eWOM information characteristics toward eWOM information on purchase intention via information usefulness and adoption is investigated in this study. The study's research model claims that eWOM information on social networking sites depends on the characteristics of eWOM information. The research model was validated through a survey of 266 customers EVs who use SNSs. Consumers can easily access bundles of eWOM information, but not all eWOM information is useful as the consumers might only search for the relevant information that shapes their purchase intention. With the growing importance of eWOM in a business, understanding the characteristics of eWOM information and how consumers' behaviors contribute to purchase intent is significant to the practitioners.

Limitations and future direction

There were several limitations to this study. First, customers of electric vehicles in Hyderabad and Secunderabad made up the study's statistical population. Given that customers of EVs make just a tiny percentage of India's millions of social media users, it's important to be cautious when interpreting and generalizing the results. This study focuses on two factors quality as the central route and Credibility of information as a peripheral route of the predictors that explain the information usefulness of eWOM. In future research, other factors can be investigated for information adoption.

References


