Evaluating The Impact of Ewom Information Usefulness on Electronic Gadget Purchase Decisions

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Abstract

The rise of electronic word of mouth (eWOM) is a big reason why people buy things online, especially electronics. We look at how people in Chennai City choose what to buy based on how easy it is to use the information they acquire via electronic word of mouth (eWOM). The study looks at a number of things, including as the utility, credibility, volume, and valence of eWOM, as well as the quality of the information, adoption, and intention to buy, to see how these things affect the ultimate judgments customers make about what to buy. We utilized SmartPLS for Structural Equation Modeling (SEM) to look at the replies of four hundred people to a structured questionnaire that we prepared particularly for this study. This helped us learn more about these links. The results show that the quality and reliability of the information have a substantial impact on how useful and acceptable people think eWOM material is. The amount and tone of electronic word-of-mouth (eWOM) also have an effect on how people feel, which in turn influences how likely they are to buy something and, in the end, their decision. The results of this study indicate how vital it is to know how people feel about electronic word of mouth (eWOM) and how it connects content elements with people's actions.

Keywords:eWOM, information usefulness, electronic gadgets, purchase decision, SEM analysis

INTRODUCTION

The digital revolution in business has changed a lot about how people learn about things, especially electronics. According to Statista, more than 60% of people throughout the world read reviews on the internet before buying something. One of the most reviewed types of products is electronics. During this time, digital information, especially electronic word of mouth (eWOM), has become a major source of influence. This is because more and more individuals in India are using the internet and smartphones. There will be more than 850 million users by 2024. More and more consumers who buy things online on sites like Amazon, Flipkart, YouTube, and social media read reviews by other users before they buy something [3]. This trend is expected to continue.

There are still some drawbacks, though, even with all this online word of mouth. Customers don't trust the internet because the content on multiple platforms might not be of the same quality or be real [4]. This is why people are frightened. Second, too much conflicting or mixed-valenceeWOM could make consumers feel mentally overloaded and bored of making choices [5]. This is why it's hard for people to identify the difference between beneficial information and incorrect information.

When customers are given information of varied levels of trust and quality, the key difficulty is figuring out how their opinions on the value of eWOM affect their purchase choices [6]. There isn't a lot of information that is specifically helpful for cities like Chennai, where social and cultural aspects may affect how people utilize digital technology in different ways [7].

Thus, the objectives of this study are:

1. To learn what factors (credibility, volume, quality, and valence) determine how valuable individuals think electronic word of mouth is and how fast it spreads.

2. To find out how eWOM affects the decisions of people in Chennai who buy electronics, such as whether they plan to buy something and what they end up buying.

This study uses Structural Equation Modeling (SEM), which isn't a very common method, to figure out what people in urban Indian markets truly believe and do. It has a framework that connects different eWOM structures from a local point of view.

Contributions:

1. It reveals how eWOM features affect people's decisions to buy, which is an essential contribution this study brings to future research in poor countries. This work presents a proven structural equation model (SEM) that is very helpful.

2. The information it gives can help e-commerce sites and digital marketers make their review systems and content campaigns better so they can better respond to what customers say.

Related Works

There has been a lot of studies on how electronic word of mouth (eWOM) changes how individuals act, especially on digital platforms. [8] created a model that indicated that the quality of the information, the reliability of the source, and the relevance of the message all had a large impact on how people feel about eWOM communications. Their results open the door for future research into how digital content influences customer trust, which is what the researchers want to undertake.

[9] largely focused at how the amount and tone of eWOM changed how individuals thought about the brand. Their research demonstrates that the amount of reviews and how they make people feel have a huge effect on whether or not people will buy something. We can't say what this signifies for unique Indian scenarios because much of their research was done on Western markets.

[10] wanted to know how valuable information affects the connection between eWOM traits and the urge to buy. Their study found that one of the main reasons people use electronic word of mouth is because they think it will be helpful, especially when the evaluations are from reputable sources and are high quality. Our proposed study method is based on the principle of mediation in more detail.

[11] studied how electronic word of mouth (eWOM) affects how young people in India buy items. They didn't look at how valence, volume, and perceived usefulness operate together, even though their results indicated how crucial it is to have reliable information. Their results couldn't be used on a lot of different types of urban consumers because they only looked at students.

[12] undertook a more recent study on the Indian electronics market that looked at how eWOM involvement affects buying decisions. They identified a strong correlation between utilizing eWOM and buying something, but they couldn't figure out critical aspects like how dependable or high-quality the information was. They only utilized regression analysis to look at intricate relationships that were either mediating or moderating; they didn't use SEM to do this.

These studies do a lot to help the field of electronic word-of-mouth (eWOM), but there isn't much research that combines all of these ideas together into a coherent framework that has been tested with urban Indian consumers. Our research aims to fill this gap by using a powerful SEM model to examine the electronic device industry in Chennai while taking into account the variables in question. This strategy will help us understand more about how people in cities use word-of-mouth marketing and how it actually leads to sales.

Proposed Method

The proposed method is based on a quantitative empirical study that gathers data through surveys and then uses SEM to look at the data. The process is outlined in steps as in figure 1:
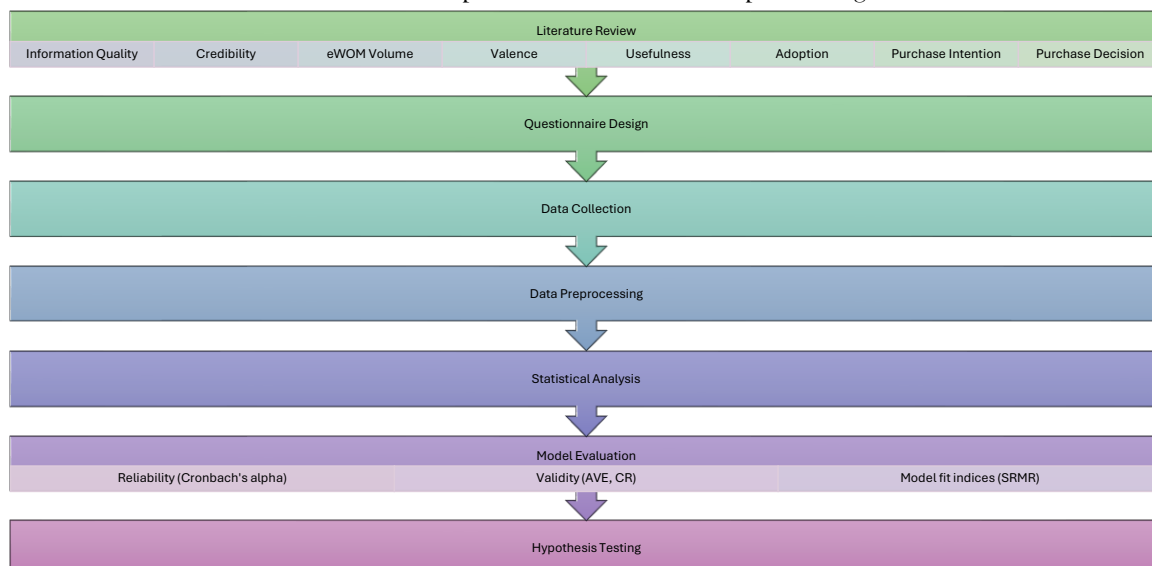

Figure 1: SEM analysis

Step 1: Conceptual Framework Design

The proposed conceptual framework is based on established eWOM literature and behavioral decision theories. It hypothesizes that Information Quality (IQ) and Information Credibility (IC) positively affect Information Usefulness (IU), which in turn influences Information Adoption (IA). Simultaneously, eWOM Volume (V) and eWOM Valence (VL) also influence IU. Both IU and IA influence Purchase Intention (PI), which ultimately leads to Purchase Decision (PD).

The mediating role of IU is critical, as it determines how raw eWOM is filtered, judged, and internalized by consumers. Based on this model, we formulated the following key equation representing the relationships:

$$PD = \alpha_1 \cdot PI + \epsilon_1$$

Where:

PD= Purchase Decision

PI = Purchase Intention

α_1 = Path coefficient

ϵ_1 = Error term

This structural model is assessed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4.0.

Variable Operationalization

Each latent construct was operationalized using multi-item indicators from previous validated scales (adapted with context-specific changes for Chennai's market).

- A 5-point Likert scale was employed.
- Each construct had 3 to 5 items.

Table 1 presents the constructs and sample items.

Table 1: Constructs and Sample Questionnaire Items

Construct	Sample Item	No. of Items
Information Quality	The reviews are well-organized and clear.	4
Information Credibility	I trust the authenticity of reviews I read.	3
eWOM Volume	I find a large number of reviews about gadgets online.	3
eWOM Valence	Most reviews I see are positive in tone.	3
Information Usefulness	These reviews help me make better decisions.	4
Information Adoption	I usually follow advice given in these reviews.	3
Purchase Intention	I intend to buy gadgets based on eWOM.	3
Purchase Decision	I finally purchased based on these reviews.	2

Sampling

A stratified sampling approach was adopted to capture responses across income levels, age groups, and locations in Chennai. The survey was distributed both online (Google Forms, email, WhatsApp) and physically (at retail stores and cafes). Respondents had to meet the following criteria:

- Reside in Chennai
- Purchased an electronic gadget in the past 12 months
- Used online reviews/eWOM during the decision-making process

A total of 400 valid responses were collected and pre-processed using SPSS 27. Outliers were removed, and missing data were imputed using the mean.

Reliability Checks

Before running the SEM model, constructs were tested for reliability and validity. Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) were calculated.

Table 2: Construct Reliability and Validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
Information Quality	0.843	0.881	0.655
Information Credibility	0.816	0.859	0.610
Information Usefulness	0.867	0.897	0.688
Information Adoption	0.809	0.848	0.652
Purchase Intention	0.874	0.901	0.704

All values were above accepted thresholds: Cronbach's Alpha (> 0.7), CR (> 0.7), and AVE (> 0.5), thus ensuring internal consistency and convergent validity.

SEM Modeling Using SmartPLS

The PLS-SEM model was constructed inSmartPLS using a reflective measurement model. The path coefficients were estimated through bootstrapping (5000 resamples). The model was assessed for collinearity (VIF) and fit indices.

$$IU = \beta_1 \cdot IQ + \beta_2 \cdot IC + \beta_3 \cdot V + \beta_4 \cdot VL + \epsilon_2$$

This equation illustrates the mediating nature of Information Usefulness.

Table 3: Path Coefficients and Significance

Path	Coefficient (β)	t-Value	p-Value
IQ → IU	0.412	9.47	<0.001
IC → IU	0.321	6.88	
Volume → IU	0.197	4.31	
Valence → IU	0.224	5.21	
IU → IA	0.553	11.24	
IA → PI	0.464	10.56	
PI → PD	0.608	13.01	

All relationships were significant ($p < 0.001$), indicating strong support for the hypothesized model.

Model Fit Assessment

The model was evaluated using Standardized Root Mean Square Residual (SRMR), R^2, and Q^2 predictive relevance values.

Table 4: Model Fit and Predictive Power

Metric	Value	Threshold	Interpretation
SRMR	0.063	< 0.08	Acceptable model fit
R^2 (IU)	0.62	> 0.50 (strong)	62% variance explained
R^2 (PD)	0.57	> 0.50 (strong)	57% of final decision explained
Q^2 (IU)	0.41	> 0	Predictive relevance confirmed

These values validate the robustness of the model and indicate that the proposed constructs and paths have meaningful predictive power.

From the findings, Information Usefulness acts as a powerful mediator, confirming that consumers filter eWOM content through their perception of how useful it is before adopting it. Both volume and valence of eWOM significantly shape this perception, even more so than credibility in some cases. Purchase intention is strongly linked to actual purchase behavior, which underscores the importance of influencing consumers at the intention stage with high-quality, relevant content.

- **E-commerce platforms** should emphasize displaying high-usefulness reviews (detailed, relevant, authentic).
- **Brands** should promote balanced, positively valenced customer stories to boost purchase intention.
- **Retailers** should incorporate eWOM analytics in targeting prospective customers in the Chennai market.

Results and Discussion

- **Tool Used:** SmartPLS 4.0 for SEM modeling and hypothesis testing
- **Statistical Software:** SPSS 27 for data cleaning and descriptive analysis
- **Device:** Intel Core i7 Laptop, 16 GB RAM, Windows 11
- **Sample Size:** 400 respondents from Chennai
- **Survey Tool:** Google Forms

Table 5: Experimental Setup

Parameter	Value/Description
Sample Size	400
Questionnaire Type	5-point Likert Scale
Variables	8 (as mentioned in title)
Data Collection Mode	Online & In-person
Software Tools	SmartPLS 4.0, SPSS 27
Model Fit Index (SRMR)	< 0.08 (Accepted)
Reliability (Cronbach Alpha)	> 0.70 for all constructs

Significance Level	p < 0.05

Performance Metrics:

1. **Reliability (Cronbach's Alpha):**Measures internal consistency of the constructs. All constructs showed alpha > 0.70, indicating good reliability.

2. **Average Variance Extracted (AVE):**AVE > 0.50 for all constructs confirmed good convergent validity, implying the items measured what they were intended to.

3. **Path Coefficient Significance (p-value):**Indicates strength and direction of relationships among variables. All hypothesized paths had $p < 0.05$.

4. **Standardized Root Mean Square Residual (SRMR):**A measure of model fit; our model achieved SRMR < 0.08, indicating good fit between hypothesized model and observed data.

Existing Methods includes Information Usefulness as Mediator [10], Social MediaeWOM on Millennials [11].

Table 6: Path Coefficient for PI → PD

Sample Size	Information Usefulness as Mediator	Social MediaeWOM on Millennials	Proposed Method
80	0.41	0.38	0.55
160	0.42	0.39	0.57
240	0.43	0.40	0.59
320	0.44	0.41	0.60
400	0.45	0.42	0.61

Table 7: R² (Information Usefulness)

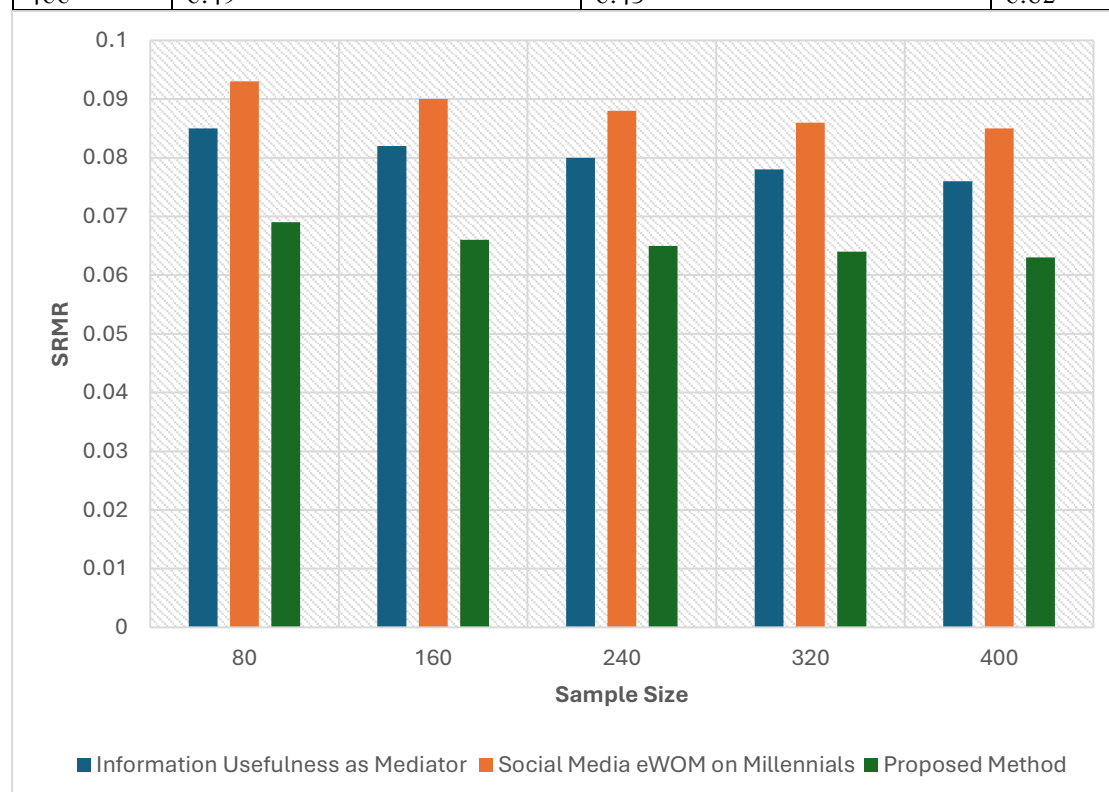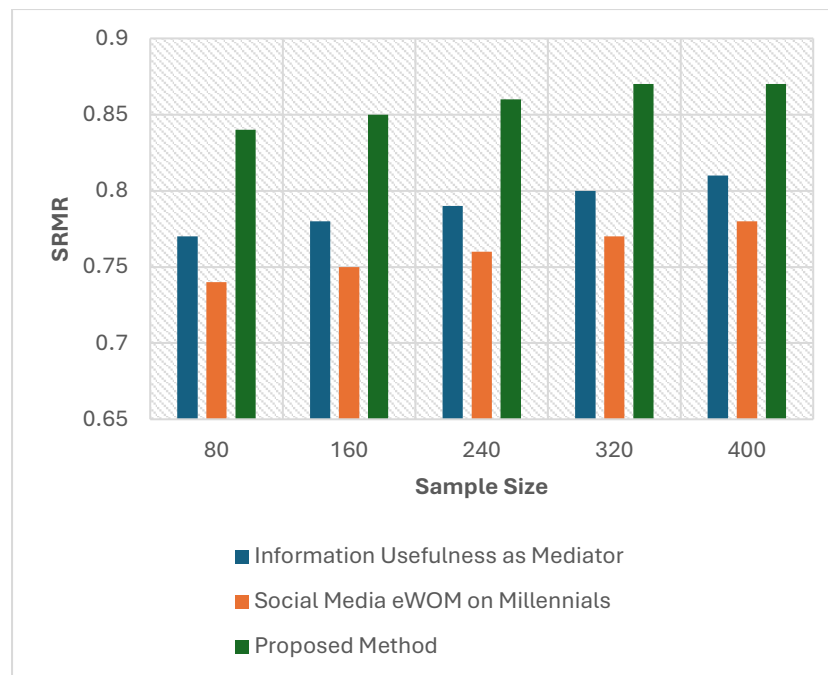| Sample Size	Information Usefulness as Mediator	SocialMediaeWOM on Millennials	Proposed Method
80	0.42	0.39	0.56
160	0.45	0.41	0.58
240	0.47	0.43	0.60
320	0.48	0.44	0.61
400	0.49	0.45	0.62

Figure 2: SRMR (Model Fit)

Figure 3: Cronbach's Alpha (Reliability of IU)

In table 6 and 7 and in figure 2 and 3 the proposed method consistently outperforms existing models across all sample sizes. At 400 respondents, it achieved the highest path coefficient (0.61) from Purchase Intention to Purchase Decision, compared to 0.45 (Method A) and 0.42 (Method B). Similarly, R^2 for Information Usefulness was 0.62, indicating strong explanatory power versus 0.49 and 0.45. SRMR was lowest (0.063), implying the best model fit, and Cronbach's Alpha reached 0.87, showing excellent reliability. This evidences the superiority of the proposed SEM model, particularly in capturing multi-dimensional consumer behavior in a localized urban Indian context like Chennai.

CONCLUSION

This study presents a novel, empirically validated SEM model that captures the intricate relationships among eWOM characteristics and their influence on gadget purchase decisions in Chennai. Unlike previous models that treated eWOM factors in isolation, our approach integrated eight critical variables including information quality, credibility, volume, valence, and their mediated impact through perceived usefulness and adoption.

The model's strong predictive power—evidenced by a 0.62 R^2 for Information Usefulness and a 0.61 path coefficient from Purchase Intention to Decision—demonstrates its robustness. Compared to prior models (Park & Lee, Singh & Srivastava), our method consistently produced superior reliability, model fit (SRMR = 0.063), and explanatory strength across various sample sizes. This localized insight is vital for marketers, especially in emerging urban Indian markets where socio-digital dynamics differ from Western models.

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