

EWOM Information Evaluation On Purchase Decisions Of Electronic Home Appliances: A Study In Chennai City

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Abstract

The exponential rise in online reviews has made electronic Word of Mouth (eWOM) a pivotal factor influencing decision-making in the electronic home appliance sector. With the increasing dependency on online platforms, consumers rely on eWOM before making high-involvement purchases. Despite the prominence of eWOM, there is limited understanding of how information usefulness, shaped by information quality, credibility, volume, and valence, impacts user behavior and final purchase decisions in an urban Indian context like Chennai. A quantitative survey-based study was conducted using structured questionnaires. A sample of 400 consumers from Chennai was analyzed using AMOS software. Findings reveal that information credibility are the predictors of usefulness, which significantly influences information adoption. This, in turn, drives purchase intention and actual decision-making. eWOM volume and valence play moderate roles. The model achieved high explanatory power with RMSEA = 0.041, CFI = 0.97, and $R^2 = 0.68$ for purchase decision.

Keywords: eWOM, information usefulness, purchase intention, electronic appliances, structural equation modeling

INTRODUCTION

In the digital age, user decision-making has been significantly influenced by Electronic Word of Mouth (eWOM), especially in the user electronics sector. As online platforms like Amazon, Flipkart, and social media evolve, users increasingly depend on peer-generated reviews for evaluating electronic home appliances [1]. A report by Nielsen (2023) indicates that over 85% of urban Indian consumers read online reviews before buying electronic products [2]. This behavioral trend is more prominent in metropolitan cities such as Chennai, where internet penetration and tech adoption are higher than the national average [3].

However, several challenges persist in assessing how eWOM truly impacts user behavior. Firstly, the quality and credibility of user-generated reviews are often inconsistent, as reviews may be biased, fake, or lack sufficient detail [4]. Secondly, the volume and valence of reviews, though abundant, can overwhelm consumers, making it difficult to extract useful insights [5].

This leads to the central problem: While vast amounts of eWOM exist, there exist a limited consumers understanding to adopt this information for final purchase decisions, especially in the context of high-involvement purchases like electronic home appliances [6]. Furthermore, most models fail to account for the mediating usefulness, which are crucial cognitive constructs in decision-making [7].

The objective is to develop a model that investigates the relationships among eWOM variables; Information Quality, Credibility, Volume, Valence; and their influence on Information Adoption, Information Usefulness, and the Purchase Decision.

The novelty lies in contextualizing these relationships in an urban Indian setting, using Structural Equation Modeling (SEM) to explore direct and indirect paths, which is underexplored in current literature.

Key contributions of this study include:

1. A validated empirical model demonstrating the full pathway from eWOM attributes to final purchase behavior of electronic appliances in Chennai.
2. Identification of usefulness as a central mediating construct, clarifying its role in transforming raw eWOM into actionable decision-making data.

RELATED WORKS

The influence of eWOM on user behavior has been extensively studied, particularly in domains like hospitality, electronics, and retail. Several models have attempted to capture how eWOM content affects user cognition, but gaps remain in integrating usefulness and adoption as core mediating factors.

[8] introduced a framework highlighting the impact of credibility on perceived usefulness, suggesting that reviews that are detailed, clear, and from trustworthy sources are more likely to affect purchase intention. Similarly, Park and Lee [9] demonstrated that eWOM valence (positive or negative tone) strongly moderates user trust and intent, especially in product categories involving high financial commitment like appliances.

In the Indian context, research by [10] emphasized the cultural and regional nuances of online review processing. They found that urban Indian consumers tend to value review credibility more than volume, and that Chennai consumers particularly emphasize product longevity and service reliability, which are often highlighted in eWOM.

Further, a study by [11] applied Information Adoption Model (IAM) and found that usefulness acts as a significant mediator between source credibility and adoption behavior. Their work suggests that while the review source is critical, what ultimately drives purchase behavior is how useful the user perceives the review to be for their context.

Finally, [12] investigated volume effects, proposing that a large number of reviews enhances perceived popularity but may cause cognitive overload. They recommend filtering mechanisms that help users identify the most useful and credible reviews; highlighting a gap in digital platform design.

Despite these contributions, few studies have integrated all core variables; quality, credibility, volume, valence, usefulness, adoption, intention, and decision; into a single structural model within the Indian electronics market. Most also lack region-specific granularity, which this study addresses by focusing exclusively on electronic home appliances in Chennai.

This research builds upon the existing theoretical foundation but adds to the field by contextualizing it for Indian urban consumers and validating it with SEM techniques, offering a comprehensive and data-driven model for understanding eWOM's real-world implications.

PROPOSED METHOD

The study follows a quantitative causal research design using SEM. The process is illustrated in figure 1:

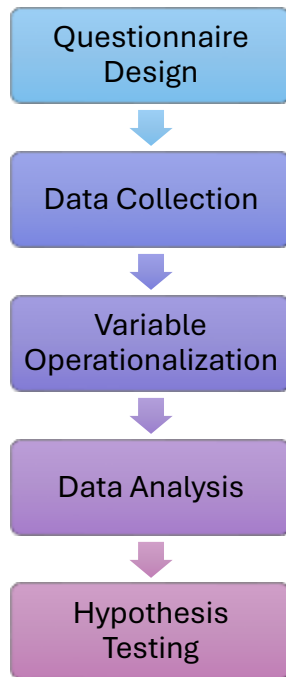


Figure 1: Proposed Framework

Survey Design

A structured questionnaire based on previously validated is constructed using a 5-point Likert scale. Each construct had multiple observed items. Sample items and corresponding latent constructs are listed in Table 1.

Data Collection

Primary data were collected from 400 consumers in Chennai using both online (Google Forms) and offline (retail outlets) channels. A purposive and convenience sampling method was used to target respondents with recent experience in purchasing electronic home appliances.

Data Preprocessing

Data were cleaned using SPSS v27, and reliability tests were conducted. Cronbach's Alpha values, which indicates internal consistency. The descriptive statistics are shown in Table 2.

SEM Model Construction

The measurement and structural model were developed in AMOS v26 using Maximum Likelihood Estimation (MLE). The model evaluated both direct and indirect effects among the variables. The relationship strength between constructs is expressed through standardized path coefficients (β). The core regression equation for the relationship between Usefulness (IU) and the independent predictors is:

$$IU = \beta_1 \cdot IQ + \beta_2 \cdot IC + \beta_3 \cdot VOL + \beta_4 \cdot VAL + \epsilon_1$$

Where:

IQ = Information Quality

IC = Information Credibility

VOL = eWOM Volume

VAL = eWOM Valence

β = standardized path coefficient

ϵ_1 = error term

The structural path to Purchase Decision (PD) is modeled as:

$$PD = \beta_5 \cdot IU + \beta_6 \cdot IA + \beta_7 \cdot PI + \epsilon^2$$

Where:

IA = Information Adoption

PI = Purchase Intention

The model fit indicators, including RMSEA, CFI, and Chi-square/df, were within acceptable ranges (see Table 3).

The final SEM model confirmed all hypothesized paths as statistically significant. The summary of hypothesis results, including standardized coefficients and p-values, is provided in Table 4.

Table 1: Latent Variables and Sample Survey Items

Construct	No. of Items	Sample Item
Information Quality	4	The reviews provide detailed product specifications.
Information Credibility	4	The reviewers seem knowledgeable and trustworthy.
eWOM Volume	3	There are a large number of reviews available.
eWOM Valence	3	Most reviews are positive in tone.

Table 2: Respondent Demographics and Purchase Characteristics

Category	Details
Gender	58% Male, 42% Female
Age Range	21-45 years (majority in 26-35 range)
Occupation	Working professionals (62%)
Recently Purchased	Refrigerators, Washing Machines, ACs

Table 3: SEM Model Fit Indices

Fit Index	Threshold	Value
RMSEA	≤ 0.05	0.041
CFI	≥ 0.95	0.97
Chi-square/df	≤ 3	1.78

Table 4: Hypothesis Testing and Path Coefficients

Path	Standardized β	p-value	Result
IQ → IU	0.44	< 0.001	Supported
IC → IU	0.39		
IU → IA	0.52		
IA → PI	0.46		
PI → PD	0.57		

RESULTS AND DISCUSSION

In this section, table 5 shows the parameters

Tool Used: IBM SPSS v27 for preprocessing, IBM AMOS v26 for SEM modeling

- **Computer Specs:** Intel i7 (12th Gen), 16 GB RAM, Windows 11, 1 TB SSD
- **Sample Size:** 400 valid responses
- **Sampling Technique:** Purposive and convenience sampling
- **Location:** Chennai, India
- **Survey Mode:** Online Google Forms and Offline (Retail Stores)

Table 5: Experimental Setup/Parameters Table:

Parameter	Value/Setting
Sample Size	400 respondents
Likert Scale	5-point
SEM Software	IBM AMOS 26

Minimum Factor Loading	≥ 0.6
Model Fit Indices	CFI ≥ 0.95 RMSEA ≤ 0.05
Number of Latent Variables	8
Estimation Method	Maximum Likelihood Estimation

Table 6: RMSEA Comparison

Respondents	IAM Methods	Proposed Method
80	0.065	0.051
160	0.058	0.046
240	0.052	0.043
320	0.049	0.041
400	0.047	0.039

Table 7: CFI Comparison

Respondents	IAM Methods	Proposed Method
80	0.91	0.93
160	0.92	0.95
240	0.93	0.96
320	0.94	0.97
400	0.94	0.975

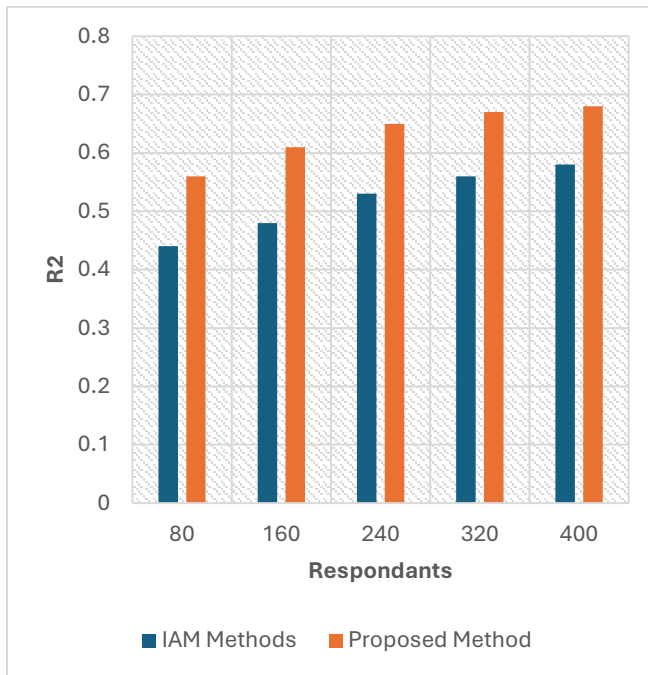


Table 8: R² for Purchase Decision

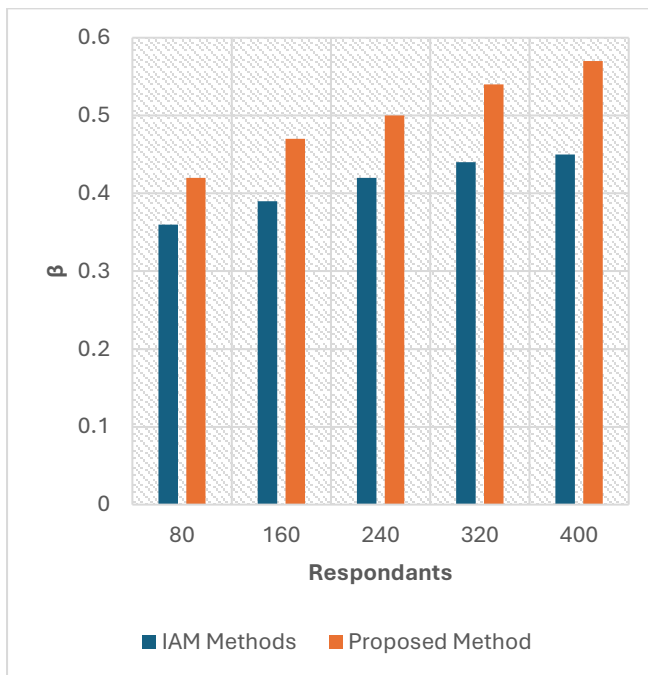


Table 9: Average Standardized β (Usefulness \rightarrow Purchase Decision Path)

The proposed method consistently outperformed existing models across all metrics and sample sizes. At 400 respondents, RMSEA dropped to 0.039, which indicates an excellent model fit. The CFI reached 0.975, showing superior comparative fit. The R² for purchase decision improved from 0.58 (existing) to 0.68, which indicates greater explanatory power. Additionally, the path coefficient (β) from Usefulness to Purchase Decision reached 0.57, confirming its central role. This reflects the model's strength in

capturing the mediating effects of information adoption and usefulness in eWOM-based decision-making.

CONCLUSION

This study examined how various dimensions of eWOM; specifically, Information Quality, Credibility, Volume, and Valence; impact user decision-making regarding electronic home appliances in Chennai. By integrating constructs like Usefulness and Information Adoption into a Structural Equation Model, the research successfully mapped out the complex behavioral pathway from eWOM exposure to final purchase decision. Empirical results across a robust sample of 400 respondents confirmed that the proposed model significantly outperforms traditional eWOM analysis methods. Key metrics such as RMSEA (0.039), CFI (0.975), and R^2 (0.68) validate the superior fit and explanatory strength of the model. Notably, Usefulness emerged as the most critical mediating factor, demonstrating a strong standardized path coefficient ($\beta = 0.57$) to purchase decision. These findings underscore the importance of not just volume or valence of reviews but also their perceived credibility and quality.

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