Credibility of EWOM and Consumer Satisfaction on Food/Health Supplement Products during the COVID-19 Pandemic

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Abstract

During the pandemic, many information about the function of various food and health supplement products for prevention/recovery from Covid-19 infection circulated through EWOM (electronic word of mouth), which was believed by consumers, even though not all of them were proven to be true. This study aims to examine the role of perceived EWOM credibility on consumer satisfaction with food/health supplement products during the COVID-19 pandemic. The theoretical framework guiding this research is Source Credibility Theory, which provides a lens to examine how the credibility of EWOM sources affects consumer satisfaction. The participants were 103 people aged 19-25 years who had purchased and consumed food/health supplement products during the COVID-19 pandemic and had read EWOM about information/reviews of the products they consumed. Participants filled out a questionnaire that measured their perceived EWOM credibility and consumer satisfaction. The data were analyzed using multiple linear regression. The results showed that perceived EWOM credibility positively influenced consumer satisfaction. Aspects of perceived EWOM credibility, included argument quality and homophily had a significant influence on consumer satisfaction. The quality of arguments positively contributes to enhancing customer satisfaction, whereas homophily, on the other hand, has a negative impact. Consequently, a heightened perception of EWOM credibility, particularly concerning the quality of argument presented directly correlated with increased participant satisfaction with the food/health supplement products they had consumed. The findings of this study hold practical implications for the promotion of food and health supplements, emphasizing the significance of EWOM credibility. Additionally, the results underscore the importance of fostering information literacy among consumers in this domain. For instance, strategies could include the dissemination of infographics illustrating methods to assess information quality and discern genuine information from hoaxes. On the other hand, relying solely on information based on shared backgrounds does not fully support the attainment of satisfaction in consumption.

Keywords: perceived credibility, electronic word of mouth, consumer satisfaction, pandemic covid 19, food and health supplement

1. Introduction

There has been an increase in the need and awareness of immune system within the community as an anticipation towards preventing the infection of COVID-19 virus, which has been a global health issue since late 2019. This, in turn, has driven the increased demand for the consumption of vitamins and dietary supplements (Rohmani, 2020). The results of a survey by Neurosensum indicate that during the Covid-19 pandemic, supplement consumption in the Indonesian population increased by 73% (Dhini, 2021). Dietary supplements are finished products consumed to complement daily meals, providing necessary vitamins, minerals, amino acids, substances used to enhance Recommended Dietary Allowances (RDAs), or concentrates, metabolites, constituents, extracts, or combination of several ingredients (Directorate General of Food and Drug Supervision, 1996).

The growing need for vitamin and dietary supplement consumption goes hand in hand with the increasing number of information circulating in the form of electronic Word of Mouth (EWOM) related to the benefits of various food products and health supplements available. EWOM refers to communication, information dissemination, and recommendations regarding products or services obtained through internet media (Mishra & Satish, 2016; Huete-Alcocer, 2017). EWOM can take various forms and platforms such as blogs, review sites, online discussion forums, recommendation sites, online comments, social networking sites, the digital realm, product sales sites, and emails.
The influence of WOM on consumer behavior and product sales has been acknowledged for over 50 years (Burton & Khammash, 2010; Basusena & Astiti, 2020). EWOM is considered more effective than offline WOM due to its broader accessibility and wide reach (Hamdani & Maulani, 2018). Research conducted in Indonesia by the Reuters Institute Digital News Report (2021) state that 89% of information sources and the most popular news resources for the majority of urban communities are online media (Newman et al., 2021). The internet, free from geographical and time limitations, enables global and rapid spread of EWOM communication (Thurau et al, 2004). Consumers can upload opinions and reviews about a product on weblogs, social networking sites, discussion forums, and review websites (Cheung & Tadani, 2010).

Consumers who research products by reading online discussions show greater product interest than those who receive product information from marketer/seller-generated sources. EWOM also holds greater credibility, relevance and empathy compared to other information sources (Bickart & Schindler, 2001). According the Shrestha (2016) cited in Kuo and Nakhata (2019), recent statistical data shows that 92% of consumers seek EWOM and 40% of them form opinions about a product by reading one to three EWOM reviews before making a purchase.

With the facility and ease of accessing information, uncertainty in news and information on social media has also increased, accompanied by the proliferation of false and misleading information on social media during the Covid-19 pandemic (Lopez-Garcia et al, 2021). Characteristics of hoaxes include presenting false or fabricated news in an exaggerated manner on omitting specific details. On the other hand, characteristics of fake news include the absence of presented facts (Gunawan & Ratmono, 2018).

A survey conducted by Katadata Insight Center (KIC) indicates that 30% to nearly 60% of Indonesians are exposed to hoaxes while accessing and communicating through social media. Only 21% to 36% of individuals are able to recognize hoaxes (Wisnubroto, 2021). KIC’s research in November 2020 revealed that 46.3% of circulating hoaxes are related to health issues (Annur, 2020). With such a situation, the credibility of EWOM becomes a key factor in assessing the accuracy of information or data originating from EWOM.

2. Literature Review

Based of the Source Credibility Theory, EWOM credibility is the extent to which someone perceives recommendations or reviews to be trustworthy, accurate and factual (Fogg, Lee, & Marshall, 2002). The results of research conducted by Daowd et al. (2021) showed that argument quality, source credibility, source style, and source homophily as factors that play a role in EWOM credibility. Argument quality represents the persuasive strength of arguments embedded in EWOM information and messages (Bhattacherjee & Sanford, 2006). Meanwhile, source credibility is defined as the assessment made by message recipients regarding their belief in the communicator (Fogg, Lee, & Marshall, 2002). Source credibility generally consists of two main components, include expertise and trustworthiness (Pornpitakpan, 2004). Kroeber-Riel and Weinberg (2003) in Lis (2013) indicate that information receivers have little reason to doubt the truthfulness of information from a highly skilled sender due to their knowledge and competence, thus making the information appear more credible. More-over a trustworthy sender exhibits a high level of objectivity and sincerity, making them appear credible and allowing information recipients to rely on the provided information (Huang & Chen, 2006).

Homophily refers to the degree of similarity among individuals in terms of education, social status and beliefs (Solomon et al, 2016). Interpersonal communication and information exchange are more likely to occur between senders and information seekers who share similar characteristics (Chu & Kim, 2011). Emotional attachments is more likely to develop when individuals have similarities, interpersonal interests, and a strong sense of trust (Hyun & Kim, 2014). On platforms with relatively anonymous rating systems focused on EWOM communication, evaluating objects in the same way leads to a sense of similarity and trust in the assessments of other evaluators (Goldbeck, 2009). Burton and Khammash (2010) suggest that initially, readers may passively engage in reading EWOM information but later contribute their opinion after feeling familiar with other assessors. Consumers also tend to trust information from sources with a high level of homophily and will follow the advice of such sources without further questioning. The results of Chih et al.’s study (2020) reveal that homophily is the most significant factor in the perceived positive EWOM review credibility from interpersonal and informational perspective. These findings further confirm that homophily plays a crucial role in the context of consumer EWOM.

Daowd et al. (2021) suggested that source style, which includes visual information, content, writing style, and language used, is a factor that influences the credibility of EWOM in the communication process. The research findings of Martawilaga and Purwanegara (2016) reveal that source style has a positive impact on information reception. Sometimes individuals are more interested in receiving information that contains photos, visual videos, and music, not necessarily because of the content being appealing.

Consumers who perceive received reviews as credible will be more confident in following EWOM information and using it to make purchasing decisions. Consumers perceive information in EWOM messages as fulfilling their
needs and desires, making them more likely to adopt that information easily (Cacioppo, Petty & Morris, 1983; Cheung et al., 2014).

With the circulation of a lot of information, not all of which can be accounted for in terms of accuracy, the credibility of messages plays a crucial role, including as a predictor of further consumer actions in making online consumption decisions (McKnight & Kacmar, 2006). The research findings of Mansourimoayyed et al. (2020) indicate a positive relationship between EWOM and customer satisfaction, which also influences repeat purchase intentions. However, Kuo and Nakhata (2019) revealed that positive EWOM can actually backfire and lead to lower customer satisfaction if consumers perceive significant inconsistencies between EWOM and their actual product experience. Customer satisfaction refers to an evaluative state of cumulative consumer experience (Harrison & Shaw, 2004; Biesok & Wyrod Wrobel, 2011). Like a revolving cycle, satisfied consumers can also provide similar testimonials to EWOM recommendations, which in turn influence the attitudes and behaviors of other message recipients (Chih et al., 2020).

The following is the conceptual framework of this study:

![Figure 1: Perceived eWOM Credibility and Consumer Satisfaction](image)

Here are the research hypotheses proposed:

Ho: Perceptions of EWOM credibility do not have a positive and significant role in customer satisfaction
H1: Perceptions of EWOM credibility have a positive and significant role in customer satisfaction

3. Materials and Methods

3.1. Materials

To test the hypotheses, the study employs a quantitative approach, utilizing a questionnaire consists of a total of 27 items, divided into 15 items measuring the variable of perceived eWOM credibility and 12 items measuring the variable of customer satisfaction. The research questionnaire was conducted online using the Microsoft Form platform. 103 participants were selected using the non-probability convenience sampling technique with the following characteristics: young adults individuals aged 18 to 30 years old residing in Indonesia, have purchased and consumed food products or health supplements during the COVID-19 pandemic, have received and read online information / reviews / ratings / messages related to the food products or health supplements they have consumed.

3.1.1. Measures

Perceived EWOM credibility was measured with a scale adapted from Daowd et al. (2021) and translated into Bahasa Indonesia using forward and backward translation method (Bartram, 2017). There are 4 dimensions of EWOM credibility perception measured: argument quality, source credibility, homophily, and source style. The questionnaire was filled out using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), and only
contained favorable items. The Likert scale represents a scale with theoretically equal intervals between responses (Creswell, 2012).

Consumer satisfaction was measured with a scale adapted from Oliver (2015) and translated into Bahasa Indonesia using the same method of forward and backward translation (Bartram et al., 2017). The questionnaire was filled out using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), which consisted of 7 favorable items and 5 unfavorable items.

Psychometric properties of the scales were sound, with the inter-item correlation values range from 0.20 to 0.40, indicating items that are homogeneous and contain unique variance (Piedmont, 2014). The reliability result of the perceived EWOM credibility scale was 0.71, while the reliability result of the consumer satisfaction scale was 0.83, measured using the Cronbach’s Alpha method (Guilford, 1973).

3.2. Methods

Hypothesis testing is conducted using the method of multiple linear regression analysis. Regression analysis is used to understand the relationship between one/many independent variables and dependent variables, as well as to determine the nature of that relationship (Guilford, 1973). There are several classic assumption tests prior to testing the hypothesis of linear regression model, include test for normality of data, heteroskedasticity, multicollinearity, and autocorrelation (Guilford, 1973). The research data obtained was analyzed with the assistance of the JASP 0.16.0 application (Jeffrey’s Amazing Statistics Program). If the result of F test > F critical, then H0 is rejected or the result is referred to as significant.

4. Results and Discussion

4.1. Results

The respondents in the study totaled 103 individuals, consisting of 75 female respondents (72.82%) and 28 male respondents (27.18%), living in several provinces in Indonesia include DKI Jakarta (45), Jambi (17), West Java (16), Banten (13), DIY (4), Central Java (3), Bali (2), Bandar Lampung (1), Riau (1) and West Sulawesi (1). The respondents in this study are aged between 19 and 25 years old. The majority (48 individuals, 46.60%) are 21 years old.

Based on the responses provided in the open-ended questions of the questionnaire, the following is an overview of the EWOM that respondents received regarding food and health supplements. Additionally, it includes details about the purchases of related products that respondents made after obtaining information from this EWOM. First, respondents receive and read information/reviews/ratings/messages online related to food products or health supplements they consume through various media channels: website, Instagram, WhatsApp, YouTube, TikTok, e-commerce, Line and TV advertisement. Additionally, the data form this research also reveal that respondents received and read information/reviews/ratings/messages online related to food products or health supplements consumed from family members, friends, social media influencers, educators/teachers/professors, e-commerce ratings, self-initiative, health care professionals, and other people’s reviews.

The food products of health supplements most purchased and consumed by the respondents include vitamin C, vitamin D, vitamin B, multivitamins, fish oil, honey, bird’s nest, and propolis from various reputable brands. The reason respondents consume these food products or health supplements are to maintain their immune systems, boost antibodies and immune system function, protect against specific diseases and viruses, prevent and alleviate COVID 19 symptoms, and aid in the recovery of weakened physical conditions due to fatigue of other health reasons. Respondents generally trust and follow information/reviews/ratings/messages online about the food products or health supplements they consume for the following reasons:

- There are many positive reviews circulating about the benefits and usefulness of these food products or health supplements.
- The companies and brands providing these food products or health supplements are widely trusted and well-known in society.
- The food products or health supplements have good ratings.
- Recommendations come from reliable sources, such as word of mouth from family, parents, friends, relatives, and even health care professionals, as well as from websites, news, and online platforms.
- The food products or health supplements are registered with the National Agency of Drug and Food Control (BPOM).
- Respondents have personally experienced the quality of the food products or health supplements (have consumed them and made repeat purchases).
- The contents of the food products or health supplements are of good quality and safe for consumption by the body.
The description of the received EWOM and the purchasing behavior of the respondents above indicates that the pandemic situation is gradually altering consumer behavior in terms of seeking information and shopping habits, as people spending more time at home. Generally, consumers tend to view and read review on social networks first to gather information and recommendations during the product purchasing decision making process especially concerning food and health supplement products.

The following are the results of descriptive statistics for the variables of EWOM credibility perception and consumer satisfaction.

<table>
<thead>
<tr>
<th>Table 1: Descriptive Analysis</th>
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<tr>
<td>Variable</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Median</td>
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<tr>
<td>Modus</td>
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<tr>
<td>Standard Deviation</td>
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<tr>
<td>Varians</td>
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<tr>
<td>Maximum</td>
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<td>Minimum</td>
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The perceived EWOM credibility has a minimum value of 42 and a maximum value of 63. The total average score is 51.69 with a standard deviation of 4.58. The median value, mode, and variance of the total score are 52, 52, and 20.96, respectively. Consumer satisfaction has a minimum value of 36 and a maximum value of 59. The total average score is 45.89 with a standard deviation of 5.29. The median value, mode, and variance of the total score are 46.47 and 27.98, respectively. The findings for both variables indicate that the standard deviation is smaller than the mean value, which means that the data distribution is even.

The normality test on the research data was conducted using the Shapiro-Wilk method, and the obtained p-value results were 0.19 > 0.05 for the variable of perceived EWOM credibility and 0.07 > 0.05 for the consumer satisfaction variable. Thus, this indicates that the data for perceived EWOM credibility and consumer satisfaction are in a normal distribution. A multicollinearity test was also performed, yielding a result of 1.0, indicating that multicollinearity was not detected. Furthermore, a heteroskedasticity test was conducted, resulting in the conclusion that the tested data exhibit homoskedasticity, allowing for the use of multiple linear regression analysis on the research data.

<table>
<thead>
<tr>
<th>Table 2: Correlation Coefficient and Significance</th>
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<tbody>
<tr>
<td>Model</td>
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<tr>
<td>( H_1 )</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>ANOVA Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>( F )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( H_1 )</td>
<td>Regression</td>
<td>686.858</td>
<td>4</td>
<td>171.714</td>
<td>7.766</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2166.968</td>
<td>98</td>
<td>22.112</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2853.825</td>
<td>102</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 presents the results of the multiple regression analysis conducted on both variables in this study, revealing
a correlation coefficient of 0.49 p < 0.05. This signifies that the perceived EWOM credibility plays a significant positive role in consumer satisfaction. The value of R² (coefficient of determination) is 0.24, indicating a relatively weak effective contribution of perceived EWOM credibility towards consumer satisfaction. The results of p-value 0.001 < 0.05 also demonstrates that the perceived EWOM credibility, encompassing the domains of argument quality (AQ), source credibility (SC), homophily (H), and source style (SS), collectively have the ability to predict consumer satisfaction.

### Table 3: Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
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<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>H1</td>
<td>Intercept</td>
<td>28.234</td>
</tr>
<tr>
<td></td>
<td>AQ</td>
<td>1.124</td>
</tr>
<tr>
<td></td>
<td>SC</td>
<td>0.080</td>
</tr>
<tr>
<td>H</td>
<td>-0.770</td>
<td>0.261</td>
</tr>
<tr>
<td>SS</td>
<td>0.182</td>
<td>0.346</td>
</tr>
</tbody>
</table>

A multiple regression analysis was also conducted on the four domains of perceived EWOM credibility to determine which among these domains – argument quality (AQ), source credibility (SC), homophily (H), and source style (SS) – can individually predict consumer satisfaction effectively. Table 3 presents the sequential results of the multiple linear regression analysis, namely, p-value 0.001 < 0.05; p-value 0.768 > 0.05; p-value -0.004 < 0.05; and p-value 0.600 > 0.05. These data indicate that the argument quality (AQ) dan homophily (H) domains significantly influence consumer satisfaction, while the source credibility (SC) dan source style (SS) domains do not play a significant role in determining consumer satisfaction. The multiple regression equation is Y = 28.234 + 1.124 X1 + 0.080 X2 – 0.0770 X3 + 0.182 X4.

### 4.2. Discussion

The findings indicate that the perceived EWOM credibility significantly influence consumer satisfaction. These results are consistent with the conclusions of a previous study by Kuo and Nakhata (2019) and Ngarmwongnoi et al (2020) which found that exposure to EWOM plays a role in consumer satisfaction. More specifically, it was found that the dimensions of perceived EWOM credibility that significantly contribute to consumer satisfaction are the dimensions of argument quality and homophily.

Results from this study illustrate that respondents in Indonesia prioritize argument quality when reading and adopting EWOM, which ultimately plays a role in post purchase consumer satisfaction of food or health supplement products during the COVID-19 pandemic. Respondents tend to adopt information or reviews with strong and credible arguments.

Respondents also tend to trust information from others who share similarities with them (age, education, occupation background and perspectives). Previous studies reveal that humans are inclined to trust strangers who are similar to them. Conversely, it is difficult to trust strangers who lack similarity (e.g., Wang et al., 2008; Goldbeck, 2009; Putri, 2018). Trust refers to a positive expectation of others, believing that they will not solely act for personal gain (Robbins & Judge, 2022).

An interesting finding from this research is that the higher the level of individual built the perceived EWOM credibility through individual similarity (homophily), the tendency the post-purchase consumer satisfaction to decrease becomes stronger. This could be attributed to consumers who utilize similarity as a criterion for evaluating EWOM credibility leading to heightened expectations and anticipations regarding the products they intend to use or consume. However, when they evaluate the actual performance of the product, and if the perceived product benefit does not align with their initial expectations, feelings of dissatisfaction consequently arise.

### 4.3. Limitations
The data collection for this study was carried out using the non-probability convenience sampling method, resulting in data being gathered based on the availability of respondents. As a result, the number of respondents divided according to characteristics such as age, gender, and geographical distribution of residence is not proportional. Therefore, generalizing the research findings to picture consumers in Indonesia needs to be approaches with great caution.

5. Conclusion

The results of this study demonstrate the significant contribution of two dimensions of perceived EWOM credibility: argument quality and homophily. The findings related to these two dimensions are interesting and merit further investigation, aiming to gain a deeper understanding of how the contribute to consumer satisfaction.

The implications of the research findings are significant for business owners and entrepreneurs involved in selling food or health supplement products. They can be encouraged to leverage EWOM as a promotional tool to enhance sales volume and build consumer trust. This can be achieved by presenting information and message online, supported by strong and credible arguments. Additionally, business owners and entrepreneurs can cultivate positive reviews and ratings on social media, websites, and e-commerce platforms.

The findings of this research also offer practical implications for developing educational program (fostering information literacy) for consumers, encouraging them to pay more attention to the credibility of information backed to quality arguments when making consumption decisions, particularly for food or health supplement products. This is to prevent reliance on unverified and potentially harmful information. For instance, strategies could include the dissemination of infographics illustrating methods to assess information quality and discern genuine information from hoaxes. Relying solely on information based on shared backgrounds does not fully support the attainment of satisfaction in consumption.

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