

Research On The Influence Of Online Content Characteristics On Consumer Purchasing Decision Process - “Shoebox” Tmall Flagship Store As An Example

Yue He¹, Xiaoyan Cheng²

¹Business School, Lingnan Normal University, Zhanjiang 524048 China
²Unicom (Guangdong) Industrial Internet Co., LTD, Guangzhou 510630 China

Abstract:

Based on the theory of the Elaboration Likelihood Model, we constructed the relationship model between online content characteristics and consumer purchasing decision process. And we used the actual data of the “shoebox” Tmall flagship store for empirical analysis. The results show that the characteristics of Marketer-generated Content (MGC) and the characteristics of User-generated content (UGC) influence the three stages of consumer purchasing decision process, and they have different influences at different stages. The research conclusions provide suggestions for the development and improvement of social e-commerce platforms in practice, and expand the empirical research in the field of online content in theory.

Keyword: Marketer-generated content (MGC); User-generated content (UGC); Elaboration Likelihood Model (ELM); Consumer purchasing decision process.

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I. Introduction

Nowadays, social e-commerce platforms such as Pinterest, Mogujie, Meilishuo, Dianping, and Little Red Book have emerged one after another, and online content has been widely used, among which the most typical online content is marketer-generated content (MGC) and user-generated content (UGC). Some researchers show that consumers will use MGC and UGC as reliable sources of information when making online consumer purchase decisions¹. At present, most of the existing studies focus on the direct impact of online content on consumer purchase decisions, while the deeper impact of online content characteristics has not received much attention. Moreover, there are few specific studies on consumer purchase decisions based on the online content characteristics of MGC and UGC. Therefore, based on previous studies, this paper further investigates the impact of online content characteristics on the three stages of consumer purchasing decision process (i.e., cognitive stage, attitude stage, and decision stage), and compares the relative impact of online content characteristics in different stages. Based on the decision routes (i.e., the central route and the peripheral route) of the Elaboration Likelihood Model (ELM), this paper constructs a research model of the influence of MGC and UGC characteristics on consumer purchasing decision process, uses the data of the “shoebox” Tmall flagship store to verify the hypotheses. This study is of great significance for enterprises in how to display marketer-generated content (MGC), appropriately guide users to generate user-generated content (UGC), reduce information overload, and correctly guide consumers to make purchasing decisions.

II. Literature Review

Elaboration Likelihood Model (ELM)

ELM was proposed by psychologists Richard Petty and Cacioppo in 1984², and it is believed that information processing can be summarized into two routes—the central route and the peripheral route. The model suggests that the central route is particularly effective when the elaboration likelihood is high, while the peripheral route is effective when the elaboration likelihood is low. This model is the most influential theoretical model in consumer information processing, which combines cognitive theory and attribution theory and has carried out a large number of empirical studies^{3,4,5}. Based on the ELM model, Park et al.⁶ studied the impact of the quality and quantity of online reviews on consumer purchase decisions and found that both the quality and quantity of online reviews had positive effects on consumer purchase decisions. Lin et al.⁷ found that consumers with a low need for cognition are mainly affected by review quantity and tend to adopt the peripheral route, while consumers with a high need for cognition are mainly affected by the review quality and tend to use the central route. Online content quality affects consumer purchase decisions through the central route, while online content quantity affects consumer purchase decisions through the peripheral route. Based on this understanding, the central route of this study includes MGC quality and UGC quality, and the peripheral route includes MGC quantity and UGC quantity.

Consumer Purchase Decisions

With the different stages of consumer purchasing decision process, consumer behavior also shows different characteristics. Kotler divides consumer purchase decisions into five stages, namely problem cognition, information collection, evaluation of alternative products, purchase decision, and post-purchase behavior⁸. Tam and Ho divide it into four stages: cognition, attitude, decision, and evaluation⁹. This study focuses on the three stages of consumer purchasing decision process, without considering the post-purchase behavior. Based on the research results of scholars in this field, it mainly explores consumer cognition, consumer attitude, and consumer purchase decisions.

MGC and Consumer Purchase Decisions

Marketer-generated Content (MGC) refers to all kinds of marketing information released by enterprises or retailers on shopping websites to improve product visibility and increase sales¹⁰. Chau et al.¹¹ believe that the more effective and easier to use MGC of an e-commerce website is, the higher consumers' evaluation of the website will be, and thus they are more likely to have shopping intentions. Yang et al.¹² find that MGC generated by mobile phones attracts more consumer engagement than MGC generated by personal computers; and MGC with more social functions attracts more consumer engagement, while MGC with more achievement functions reduces consumer engagement. Noguti¹³ reveals that MGC consumption experiences also generate significant consumer learning that improves purchase outcomes for consumers.

UGC and Consumer Purchase Decisions

Rising with the development of social media, User-generated Content (UGC) means that users display their original content through the Internet platform or provide it to other users. According to the Organization for Economic Co-operation and Development (OECD)¹⁴, UGC has three characteristics: (1) Publication carrier: UGC is published on the Internet platform; (2) Originality: UGC is original by the author, without plagiarism; (3) Amateur creation: UGC is created by amateurs, usually with no intention of making a profit. The detailedness, readability, and objectivity of UGC, as well as the social recognition and popularity of the creator, all have a significant impact on UGC helpfulness¹⁵. Many scholars have done a lot of research on UGC, the vast majority of which focuses on online reviews. Vermeulen and Seegers find that both the quantity and quality of online reviews can significantly affect consumers' attention and judgment on products and impact consumers' consideration results¹⁶. Utz et al.¹⁷ believe that due to the serious information asymmetry of online transactions and the inability of consumers to judge product quality in person, potential consumers will trust online reviews more. Schlosser¹⁸ indicates that consumers are willing to truly reflect their personal needs and experiences through online reviews, which is more conducive to potential consumers purchasing decisions. Kumar and Benbasat demonstrate that online reviews can significantly improve consumers' perception of the sociality and usefulness of websites¹⁹. There are two types of UGC (i.e., Story and Review) on Airbnb, UGC-story plays a positive direct role in the reservation, and UGC-review works as a pull factor by attracting extant travelers who have investigated nearby accommodations, based on the negative spatial spillover effect²⁰. Short video UGC generates a stronger purchase intention than graphic UGC, and that perceived value acts as a mediator between the type of UGC and purchase intention²¹.

MGC and UGC in Consumer Purchase Decisions

Dou et al.²² prove that consumers attach more importance to comments provided by other consumers than information released by marketers. Goh, Heng and Lin¹⁰ show that UGC has a greater impact on consumer purchasing behavior than MGC. Although UGC seems to be superior to MGC on the surface, Godes and Mayzlin suggest that both MGC and UGC can overcome the limitations of traditional word-of-mouth²³. The incremental view count of a free fitness video is affected by both UGC and MGC, and exercise intensity strengthens the impacts of UGC on free digital content consumption while weakening the impacts of MGC²⁴. The information on both types of websites (i.e., MGC and UGC) are complementary in tourist decision making and they influence tourists' information search behavior in different ways²⁵. In addition, consumers' information needs will change during consumer purchasing decision process, and consumers' reference to MGC and UGC will change in different stages of consumer purchasing decision process. Therefore, this paper explores the influence of MGC and UGC on different stages of consumer purchasing decision process. In this paper, MGC quantity, MGC quality, UGC quantity, and UGC quality are collectively referred to as online content characteristics.

III. Hypotheses

The Central Route

Cognition is the first stage of consumer purchasing decision process, which is particularly important for shaping consumer cognition of the product. In this stage, MGC presents consumers with a standardized layout through text, pictures, and multimedia files, describing functions, attributes, parameters, and brands in detail, so

that consumers can form the concept of products in their minds. In e-commerce websites, UGC includes two formats: text and images, which can be divided into two basic types: one that is emotional and subjective, and another that is specific, clear, and logical. Consumers can recognize the quality and physical feeling of products through UGC. Therefore, UGC and MGC both affect consumers' cognition of products, but MGC is more lively and vivid than UGC in product description, with more diversified angles and more aesthetic layout, so that consumers can have a deeper impression of products after watching MGC. Therefore, the following hypotheses are proposed.

H1: Online content quality has a positive impact on consumer cognition.

H1a: MGC quality has a positive influence on consumer cognition.

H1b: UGC quality has a positive impact on consumer cognition.

H1c: MGC quality has a greater impact on consumer cognition than UGC quality.

After the formation of consumer cognition for the product, it is followed by the evaluation of the known product, thus forming the attitude towards the product. UGC has become an important factor affecting brand evaluation because of its high independence and credibility²⁶. Many aspects (e.g., product characteristics, company image, customer preferences, advertising, etc.) will affect the formation of consumer attitudes²⁷. Therefore, the quality of UGC and MGC has a positive impact on consumer attitude. However, compared with MGC, UGC has higher credibility and exhibits strong interactivity. Thus, the following hypotheses are formulated.

H2: Online content quality has a positive influence on consumer attitude.

H2a: MGC quality has a positive influence on consumer attitude.

H2b: UGC quality has a positive influence on consumer attitude.

H2c: UGC quality has a greater influence on consumer attitude than MGC quality.

In the final stage of consumer purchasing decision process, UGC quality provides an important basis for purchase decisions. Petty and Cacioppo point out that objective high-quality reviews are more influential and have a greater impact on purchasing decisions²⁸. The product attributes of MGC are an important aspect of meeting consumer demand²⁹. Therefore, both UGC quality and MGC quality may have a positive impact on purchasing decisions. However, some UGC information with obvious subjective evaluation can make consumers have the psychology of conformity. Meanwhile, marketing research shows that UGC with positive and negative sides has higher credibility³⁰. Therefore, UGC with positive and negative information has a greater influence on consumers' purchasing decisions than MGC with only positive information. Accordingly, the following hypotheses are presented.

H3: Online content quality has a positive impact on consumer purchase decisions.

H3a: MGC quality has a positive impact on consumer purchase decisions.

H3b: UGC quality has a positive impact on consumer purchase decisions.

H3c: UGC quality has a greater impact on consumer purchase decisions than MGC quality.

The Peripheral Route

In the process of information processing, consumers do not necessarily carefully evaluate the content of the information, and in some cases, consumers will use the peripheral route to process information. UGC quantity shows the popularity of the product, that is, the influence of online word-of-mouth, which is related to the sales volume of the product³¹. The more UGC quantity there is, the more popular the product is and the better known it is. In addition, the strength of the merchant or retailer's promotion is reflected in the recommended products on the homepage or search page of the website. The greater the promotion intensity, the easier it is for consumers to notice the product when searching for it. Therefore, MGC quantity may have an important impact on consumer cognition than UGC quantity, and consumers will expand their search set as much as possible in the stage of cognition. Thus, the following hypotheses are suggested.

H4: Online content quantity has a positive impact on consumer cognition.

H4a: MGC quantity has a positive impact on consumer cognition.

H4b: UGC quantity has a positive impact on consumer cognition.

H4c: MGC quantity has a greater impact on consumer cognition than UGC quantity.

When consumers see a large number of UGC, they will feel that the product is very popular, and many people buy it, thus improving the attitude evaluation of the product and forming a good impression of the product. Furthermore, UGC quantity will cause consumers to create a herd mentality and rationalize their purchase decisions. The increase in UGC quantity can reduce or eliminate the discomfort experienced by consumers when taking risks³². Consequently, the following hypotheses are put forward.

H5: Online content quantity has a positive impact on consumer attitude.

H5a: MGC quantity has a positive impact on consumer attitude.

H5b: UGC quantity has a positive impact on consumer attitude.

H5c: UGC quantity has a greater impact on consumer attitude than MGC quantity.

In addition, UGC quantity is not only a signal indicating the popularity of a product, but also contains a wealth of information³³. The greater the number of UGC, the greater the probability that consumers can obtain

relevant useful information from it, and the more beneficial it is for consumers to understand the product. Hence, the following hypotheses are introduced.

H6: Online content quantity has a positive impact on consumer purchase decisions.

H6a: MGC quantity has a positive impact on consumer purchase decisions.

H6b: UGC quantity has a positive impact on consumer purchase decisions.

H6c: UGC quantity has a greater impact on consumer purchase decisions than MGC quantity.

Comparative Study of the Central Route and the Peripheral Route

According to the ELM theory, the higher the willingness of consumers to learn about the product, they will analyze the online content deeply and choose the central route more likely, thus strengthening the focus on content quality and reducing the lazy dependence on the peripheral route. In the stage of consumer cognition, faced with the intricate product information searched, consumers will rely on one or two prominent peripheral clues in this information, such as UGC quantity, to minimize decision-making effort³⁴. If the central route is chosen, the product-related information needs to be systematically analyzed, which will cost consumers a lot of energy. In the stage of consumer attitude, many scholars have studied the external factors that affect the effectiveness of information persuasion, such as source credibility, repetition times, and so on³⁵, and UGC quality information has high credibility. In the stage of consumer purchase decisions, when studying the online conformity behavior of consumers, some researchers find that when the rate of favorable reviews is 100%, the proportion of choosing to buy is higher than when the rate of favorable reviews is 75%³⁶. Accordingly, the following hypotheses are outlined.

H7: In the stage of consumer cognition, the peripheral route plays a major role, and online content quantity has a greater impact on consumer cognition than online content quality.

H8: In the stage of consumer attitude, the central route plays a major role, and online content quality has a greater impact on consumer attitude than online content quantity.

H9: In the stage of consumer purchase decision, the central route plays a major role, and online content quality has a greater impact on consumer purchase decisions than online content quantity.

IV. Research Design

Research Model

Based on the above analysis, the research model proposed in this paper is shown in Figure 1:

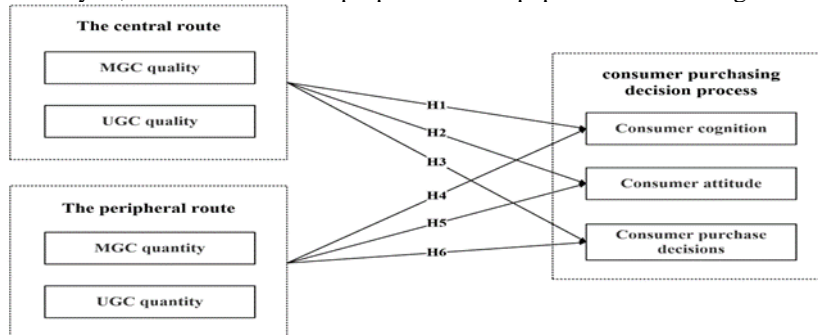


Figure 1 Research model of the influence of UGC and MGC characteristics on consumer purchasing decision

Empirical Model

Through the review of existing online content-related literature, it is found that the research results on the impact of online content on product sales are very rich. Most of these studies have found a linear or log-linear relationship between online content and product sales or seller revenue. Therefore, to verify the research hypotheses, this paper adopts a linear regression model and adds different characteristics of online content, and the regression model is obtained as shown in Formula 1, Formula 2, and Formula 3.

Among them, there are three kinds of numerical consumer decision information: (1) The number of page views of the store: refers to a total of how many pages of information are visited by consumers every day, representing the consumer cognition of the “shoebox” store. (2) The collection volume of the store: refers to how many consumers collect the “shoebox” store every day, indicating the popularity of the “shoebox” store, which is an indication of consumer attitude. (3) Sales volume: refers to the daily sales volume and is an indication of consumer purchase decisions. There is also the promotion information and evaluation information of the store, which are respectively: the daily promotion amount, the visit time of consumers, the total number of evaluators, and the average value of evaluation, respectively representing MGC quantity, MGC quality, UGC quantity and UGC quality. Since consumer purchasing decision process is also affected by price, week, old users, and so on, these variables are taken as control variables in this paper. In addition, price information for each item is provided

on the search page of the “shoebox” store, but since the study is for the entire store, the average price of all products is used in this study.

In the stage of consumer cognition, Formula 1:

$$\ln(PV) = \beta_0 + \beta_1MGC_{QN} + \beta_2UGC_{QN} + \beta_3MGC_{QL} + \beta_4UGC_{QL} + \beta_5WEEK + \beta_6APRICE + \beta_7OUSER + \mu_1$$

In the stage of consumer attitude, Formula 2:

$$\ln(CV) = \beta_0 + \beta_1MGC_{QN} + \beta_2UGC_{QN} + \beta_3MGC_{QL} + \beta_4UGC_{QL} + \beta_5WEEK + \beta_6APRICE + \beta_7OUSER + \mu_1$$

In the stage of consumer purchase decisions, Formula 3:

$$\ln(SV) = \beta_0 + \beta_1MGC_{QN} + \beta_2UGC_{QN} + \beta_3MGC_{QL} + \beta_4UGC_{QL} + \beta_5WEEK + \beta_6APRICE + \beta_7OUSER + \mu_1$$

In the formula: PV - page view, SV - sales volume, CV - collection volume, MGC_{QN}- MGC quantity, UGC_{QN} - UGC quantity, MGC_{QL} - MGC quality, UGC_{QL} - UGC quality, WEEK - week, APRIC - average product price, OUSER - old user

This study used real data provided by “shoebox” Tmall flagship store, which collected data on sales volume, promotions, and reviews for eight months. “Shoebox” is a shoe store, and on its flagship Tmall store, consumers can not only retrieve, check, and compare shoe information, but also post reviews.

V. Results

Descriptive Statistics:

SPSS22.0 was used to conduct a preliminary analysis of the data, and the descriptive statistical results of the research data are shown in Table 1.

Table 1 Descriptive statistics

| Variable | Minimum | Maximum | Mean | Standard deviation |
|-----------------------|---------|---------|-----------|--------------------|
| Sales volume | 28 | 12807 | 623.92 | 982.954 |
| Collection volume | 245 | 11540 | 4339.40 | 2001.101 |
| Page view | 47756 | 923157 | 235131.27 | 107072.005 |
| MGC quantity | 15501 | 856186 | 120949.73 | 114299.230 |
| UGC quantity | 245 | 4639 | 1039.95 | 582.695 |
| MGC quality | 82 | 151 | 111.77 | 12.012 |
| UGC quality | 4.74348 | 4.82703 | 4.8029982 | 0.01619616 |
| Week | 1 | 7 | 4.00 | 2.007 |
| Average product price | 84 | 149 | 120.65 | 15.929 |
| Old user | 5 | 1842 | 94.25 | 145.761 |

As shown in Table 1, among the variables, the average sales volume is high, but the difference between the maximum and minimum is very large. And old users are also facing the same problem, which may be closely related to the way the store is promoted. It can also be seen from the table that there is little difference between the maximum and the minimum of UGC quality, which is caused by a large number of evaluations of UGC quality and the evaluation of only 5 levels, which is in line with the actual situation. The difference between the maximum and minimum of three variables (i.e., old users, MGC quantity, and UGC quality) is also relatively large, indicating that the store has different methods of promotion in different periods, which is consistent with the actual situation. The majority of customers for “shoebox” are young people, and the statistical information according to the week system is in line with the shopping habits of office workers.

Correlation Analysis:

Pearson correlation analysis method was used to test the correlation of each variable, and the results are shown in Table 2:

Table 2 Correlation analysis

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------------------|---------|--------|---------|---|---|---|---|---|---|----|
| 1 Sales volume | - | | | | | | | | | |
| 2 Collection volume | 0.484** | - | | | | | | | | |
| 3 Page view | 0.706** | 0.899* | - | | | | | | | |
| 4 MGC quantity | 0.106 | 0.412* | 0.370** | - | | | | | | |

| | | | | | | | | | | | |
|----|-------------------|--------------|-------------|--------------|-------------|-------------|--------|--------------|--------|--------------|---|
| 5 | UGC quantity | 0.474** | 0.389* * | 0.429** | 0.230* * | - | | | | | |
| 6 | MGC quality | 0.063 | 0.241* * | 0.250** | 0.174* * | 0.096 | - | | | | |
| 7 | UGC quality | 0.091 | 0.125 | 0.188** | - 0.151* | -0.085 | 0.003 | - | | | |
| 8 | Week | -0.074 | 0.025 | 0.000 | 0.025 | 0.014 | -0.088 | 0.004 | - | | |
| 9 | Ave product price | - 0.276** | -0.080 | - 0.256** | 0.221* * | 0.029 | -0.073 | - 0.728** | 0.065 | - | |
| 10 | Old user | 0.979** | 0.466* * | 0.667** | 0.093 | 0.448* * | 0.066 | 0.105 | -0.089 | - 0.287** | - |

* denotes $P < 0.05$, ** denotes $P < 0.01$

As presented in Table 2, the correlation coefficients between sales volume and collection volume, as well as between sales volume and page view are 0.484** and 0.706**, both of which are greater than 0, and the correlation relationship is significant at the level of 0.01, indicating that it is reasonable to use page view, collection volume, and sales volume to indicate consumer purchasing decision process. At the same time, the correlation coefficients between MGC quantity and collection volume, as well as between MGC quantity and page views are 0.412** and 0.370**, all of which are greater than 0, and the correlation relationship is significant at the level of 0.01, indicating that MGC quantity is related to collection volume and page views. Similarly, MGC quality is related to collection volume and page views. Similarly, UGC quantity is related to page views, collection volume, and sales volume, while UGC quality is only related to page views.

Regression Analysis

Analysis of consumer cognition

According to Formula 1, the control variable is first taken as the baseline model. Then, we analyze the influence of different online content characteristics (i.e., MGC quantity, UGC quantity, MGC quality, and UGC quality) on consumer cognition under the central route and the peripheral route respectively. The regression results of consumer cognition are shown in Table 3.

Table 3 Regression model of consumer cognition

| Variable | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------|-----------------|------------------|-----------------|-----------------|
| MGC quantity | | 0.000** (0.332) | | 0.000** (0.299) |
| UGC quantity | | 0.017* (0.118) | | 0.020* (0.111) |
| MGC quality | | | 0.000** (0.216) | 0.000** (0.151) |
| UGC quality | | | 0.016* (0.164) | 0.018* (0.144) |
| Week | 0.187 (0.063) | 0.238 (0.050) | 0.110 (0.074) | 0.169 (0.057) |
| Average product price | 0.141 (-0.074) | 0.000** (-0.183) | 0.365 (0.064) | 0.401 (-0.055) |
| Old user | 0.000** (0.652) | 0.000** (0.536) | 0.000** (0.660) | 0.000** (0.554) |
| Constant term | 0.000** | 0.000** | 0.016* | 0.022* |
| R ² | 0.447 | 0.569 | 0.499 | 0.595 |

Dependent variable: Page view (PV). * denotes $P < 0.05$, ** denotes $P < 0.01$

In Table 3, Model 2 is the result obtained by introducing MGC quantity and UGC quantity into the regression model. According to 0.000**, it can be seen that at 0.01 level, MGC quantity has a significant positive impact on consumer cognition, which proves that H4a is valid. According to 0.017*, it shows that at the level of 0.05, UGC quantity has a significant positive impact on consumer cognition, which proves that H4b is established. The influence coefficient of MGC quantity on consumer cognition is 0.332, which is greater than that of UGC quantity (i.e., 0.118), indicating that the influence degree of MGC quantity on consumer cognition is greater than that of UGC quantity, which proves that H4c is established.

In Table 3, Model 3 is the result obtained by introducing MGC quality and UGC quality into the regression model. Similarly, MGC quality has a significant positive impact on consumer cognition, which proves that H1a is established. UGC quality has a significant positive impact on consumer cognition, which proves that H1b is established. The influence coefficient of MGC quality on consumer cognition is 0.216, which is greater than that of UGC quality (i.e., 0.164), indicating that the influence degree of MGC quality on consumer cognition is greater than that of UGC quality, which proves the establishment of H1c.

In Table 3, Model 4 introduces MGC quantity, UGC quantity, MGC quality, and UGC quality into the regression model, and the results show that: The influence of MGC quantity on consumer cognition in Model 4 is the same as that of MGC quantity in Model 2, and the influence of UGC quantity on consumer cognition in Model 4 is the same as that of UGC quantity in Model 2, both of which are significant positive effects with the same degree, which proves that H4 is established. The influence of MGC quality on consumer cognition in Model 4 is the same as that of MGC quality in Model 3, and the influence of UGC quality on consumer cognition in Model 4 is the same as that of UGC quality in Model 3, both of which are significant positive effects with the same

degree, proving that H1 is established. The influence coefficient of online content quantity on consumer cognition is $0.299+0.111=0.410$, which is greater than that of online content quality $0.151+0.144=0.295$, indicating that the influence degree of online content quantity on consumer cognition is greater than that of online content quality, which proves that H7 is established.

Analysis of Consumer Attitude

According to Formula 2, similarly, the regression results of consumer attitude are shown in Table 4.

Table 4 Regression model of consumer attitude

| Variable | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------|-----------------|-----------------|-----------------|-----------------|
| MGC quantity | | 0.000** (0.358) | | 0.000** (0.251) |
| UGC quantity | | 0.011* (0.151) | | 0.011* (0.146) |
| MGC quality | | | 0.000** (0.233) | 0.002** (0.161) |
| UGC quality | | | 0.001** (0.358) | 0.001** (0.320) |
| Week | 0.225 (0.065) | 0.335 (0.050) | 0.188 (0.072) | 0.292 (0.053) |
| Average product price | 0.355 (0.055) | 0.232 (-0.067) | 0.001** (0.275) | 0.067 (0.144) |
| Old user | 0.000** (0.487) | 0.000** (0.350) | 0.000** (0.507) | 0.000** (0.380) |
| Constant term | 0.006** | 0.000** | 0.001* | 0.001* |
| R ² | 0.214 | 0.363 | 0.292 | 0.408 |

Dependent variable : Collection volume (CV). * denotes $P < 0.05$, ** denotes $P < 0.01$

In Table 4, Model 2 is the result obtained by introducing MGC quantity and UGC quantity into the regression model. According to 0.000**, it can be seen that MGC quantity has a significant positive impact on consumer attitude, which proves that H5a is valid. According to 0.011*, UGC quantity has a significant positive impact on consumer attitude, which proves that H5b is established. The influence coefficient of MGC quantity on consumer attitude is 0.358, which is greater than that of UGC quantity (i.e., 0.151), indicating that the influence degree of MGC quantity on consumer attitude is greater than that of UGC quantity, which proves that H5c is supported in reverse.

In Table 4, Model 3 is the result obtained by introducing MGC quality and UGC quality into the regression model. Similarly, it shows that MGC quality has a significant positive impact on consumer attitude, which proves that H2a is valid. UGC quality has a significant positive impact on consumer attitude, which proves that H2b is valid. The influence coefficient of MGC quality on consumer attitude is 0.233, which is smaller than that of UGC quality (i.e., 0.358), indicating that the influence degree of UGC quality on consumer attitude is greater than that of MGC quality, which proves the validity of H2c.

In Table 4, Model 4 introduces MGC quantity, UGC quantity, MGC quality, and UGC quality into the regression model, and the results are obtained as follows: The influence of MGC quantity on consumer attitude in Model 4 is the same as that of MGC quantity in Model 2, and the influence of UGC quantity on consumer attitude in Model 4 is the same as that of UGC quantity in Model 2, both of which are significant positive effects with the same degree, which proves that H5 is established. The influence of MGC quality on consumer attitude in Model 4 is the same as that of MGC quality in Model 3, and the influence of UGC quality on consumer attitude in Model 4 is the same as that of UGC quality in Model 3, both of which are significant positive effects with the same degree, which proves that H2 is established. The influence coefficient of online content quantity on consumer attitude is $0.251+0.146=0.397$, which is smaller than that of online content quality $0.161+0.320=0.481$, indicating that the influence of online content quality on consumer attitude is greater than that of online content quantity, which proves that H8 is valid. At this stage, the influence of UGC quality increases.

Analysis of Consumer Purchase Decisions

According to Formula 3, similarly, the regression results of consumer purchase decisions are shown in Table 5.

Table 5 Regression model of consumer purchase decisions

| Variable | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------|-----------------|-----------------|-----------------|-----------------|
| MGC quantity | | 0.531 (0.009) | | 0.454 (0.010) |
| UGC quantity | | 0.004** (0.043) | | 0.004** (0.043) |
| MGC quality | | | 0.911 (-0.001) | 0.605 (-0.007) |
| UGC quality | | | 0.362 (-0.18) | 0.362 (-0.017) |
| Week | 0.301 (0.063) | 0.381 (0.011) | 0.282 (0.014) | 0.378 (0.012) |
| Average product price | 0.739 (-0.074) | 0.718 (-0.005) | 0.655 (-0.009) | 0.347 (-0.019) |
| Old users | 0.000** (0.652) | 0.000** (0.959) | 0.000** (0.980) | 0.000** (0.957) |
| Constant term | 0.573 | 0.610 | 0.367 | 0.362* |
| R ² | 0.595 | 0.609 | 0.589 | 0.609 |

Dependent variable : Sales volume (SV). * denotes $P < 0.05$, ** denotes $P < 0.01$

In Table 5, Model 2 is the result obtained by introducing MGC quantity and UGC quantity into the regression model. According to 0.531, MGC quantity has no significant impact on consumer purchase decisions, which proves that H6a is not valid. According to 0.004**, UGC quantity has a significant positive impact on consumer purchase decisions, which proves that H6b is established. The influence coefficient of UGC quantity on consumer purchase decisions is 0.043, and MGC quantity does not influence consumer purchase decisions, indicating that the influence of UGC quantity on consumer purchase decisions is large, which proves that H6c is established.

In Table 5, Model 3 is the result obtained by introducing MGC quality and UGC quality into the regression model. Similarly, it shows that MGC quality has no significant influence on consumer purchase decisions, which proves that H3a is not valid. UGC quality has no significant influence on consumer purchase decisions, which proves that H3b is not valid. MGC quality and UGC quality do not influence consumer purchase decisions, which proves that H3c is not established.

In Table 5, Model 4 introduces MGC quantity, UGC quantity, MGC quality, and UGC quality into the regression model, and the results are obtained as follows: The effect of UGC quantity on consumer purchase decisions in Model 4 is the same as that of UGC quantity in Model 2, which is a significant positive effect, while MGC quantity does not affect consumer purchase decisions, which proves that H6 is partially established. MGC quality and UGC quality do not influence consumer purchase decisions, which proves that H3 is not valid. Online content quantity has an impact on consumer purchase decisions, indicating online content quantity has a large impact on consumer purchase decisions, which proves that the reverse of H9 is valid.

VI. Conclusion And Suggestion

Conclusion:

According to the above analysis, the hypotheses (i.e., H1, H1a, H1b, H1c; H2, H2a, H2b, H2c; H4, H4a, H4b, H4c; H5, H5a, H5b; H6b, H6c; H7; H8) are established. The hypotheses (i.e., H3, H3a, H3b, H3c; H6a) are not valid. H6 is partially established. The hypotheses (i.e., H5c; H9) are established in reverse. The specific hypotheses verification results are shown in Table 6.

Table 6 The verification of hypotheses

| Hypothesis content | Results |
|---|-----------------|
| H1: Online content quality has a positive impact on consumer cognition. | Support |
| H1a: MGC quality has a positive influence on consumer cognition. | Support |
| H1b: UGC quality has a positive impact on consumer cognition. | Support |
| H1c: MGC quality has a greater impact on consumer cognition than UGC quality. | Support |
| H2: Online content quality has a positive influence on consumer attitude. | Support |
| H2a: MGC quality has a positive influence on consumer attitude. | Support |
| H2b: UGC quality has a positive influence on consumer attitude. | Support |
| H2c: UGC quality has a greater influence on consumer attitude than MGC quality. | Support |
| H3: Online content quality has a positive impact on consumer purchase decisions. | Nonsupport |
| H3a: MGC quality has a positive impact on consumer purchase decisions. | Nonsupport |
| H3b: UGC quality has a positive impact on consumer purchase decisions. | Nonsupport |
| H3c: UGC quality has a greater impact on consumer purchase decisions than MGC quality. | Nonsupport |
| H4: Online content quantity has a positive impact on consumer cognition. | Support |
| H4a: MGC quantity has a positive impact on consumer cognition. | Support |
| H4b: UGC quantity has a positive impact on consumer cognition. | Support |
| H4c: MGC quantity has a greater impact on consumer cognition than UGC quantity. | Support |
| H5: Online content quantity has a positive impact on consumer attitude. | Support |
| H5a: MGC quantity has a positive impact on consumer attitude. | Support |
| H5b: UGC quantity has a positive impact on consumer attitude. | Support |
| H5c: UGC quantity has a greater impact on consumer attitude than MGC quantity. | Reverse support |
| H6: Online content quantity has a positive impact on consumer purchase decisions. | Partial support |
| H6a: MGC quantity has a positive impact on consumer purchase decisions. | Nonsupport |
| H6b: UGC quantity has a positive impact on consumer purchase decisions. | Support |
| H6c: UGC quantity has a greater impact on consumer purchase decisions than MGC quantity. | Support |
| H7: In the stage of consumer cognition, the peripheral route plays a major role, and online content quantity has a greater impact on consumer cognition than online content quality. | Support |
| H8: In the stage of consumer attitude, the central route plays a major role, and online content quality has a greater impact on consumer attitude than online content quantity. | Support |
| H9: In the stage of consumer purchase decision, the central route plays a major role, and online content quality has a greater impact on consumer purchase decisions than online content quantity. | Reverse support |

The study had some remarkable results. First, it can be seen from the established model that UGC quantity and MGC quantity affect consumer purchasing decision process through the peripheral route, and UGC quality and MGC quality affect consumer purchasing decision process through the central route. Second, it compares the relative effects of UGC and MGC in consumer purchasing decision process. Specifically, in the stage of consumer cognition, MGC quality has a greater influence than UGC quality, MGC quantity has a greater influence than

UGC quantity; In the stage of consumer attitude, UGC quality has a greater influence than MGC quality, MGC quantity has a greater impact than UGC quantity; In the stage of consumer purchase decisions, UGC quantity has the greatest impact, while UGC quality, MGC quality and MGC quantity have no impact, which is unexpected. Possibly because in the stage of consumer purchase decisions, consumers choose products with greater popularity and reduce risks based on herd psychology. Finally, it proves the relative influence of the central route and the peripheral route in the consumer purchasing decision process. In the stage of consumer cognition, consumers' peripheral route plays a more important role. In the stage of consumer attitude, consumers' central route plays a more important role. In the stage of consumer purchase decisions, consumers' peripheral route plays a more important role, and only UGC quantity has an impact on the stage of consumer purchase decisions, which may be related to the selection of experiential products as research objects.

Suggestion

Based on the research results, this paper puts forward two suggestions. First, marketers should carefully design campaigns to encourage the generation of UGC. For example, marketers can use coupons and points to motivate consumers to share their experiences, and marketers can also use a community operation strategy to encourage consumers to share positive product information in the community through the method of anonymity. Second, marketers should actively integrate the information of UGC and MGC to strengthen the interaction with consumers will make the platform better. For example, in addition to displaying consumer reviews of restaurants, e-commerce platforms can also provide free channels for consumers to communicate marketing information with restaurant marketers, such as introducing new dishes, responding to customer inquiries, and integrating functional elements of customer relationship management within social e-commerce platforms.

This paper is of great significance to the design of social e-commerce platforms. Its main contributions are as follows: (1) By emphasizing the influence of MGC, enterprises or retailers can actually change from a passive role to a positive and influential role; (2) The effects of UGC and MGC were quantified through the quality and quantity dimensions of online content; (3) Comparing the role of UGC and MGC in consumer purchasing decision process, thus complementing and enriching the past work.

In addition, there are some shortcomings in this study, which does not consider the time factor of consumer purchasing decision process. However, the longitudinal study based on time will help to better understand the causal relationship of this study. Therefore, scholars can consider the time factor to improve this research in the future. A further consideration in the future is how to correctly combine UGC and MGC at different stages of consumer purchasing decision process to achieve the best impact.

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