# The Impact of Short Video User Loyalty on Marketing: A Case Study of Douyin

Wei He[1*]
Kitikorn Dowpiset[2]
Ruengsak Kawtummachai[3]
Chompu Nuangjamnong[4]


[1]Master of Science in Management,
Graduate School of Business and Advanced Technology Management
Assumption University of Thailand, Bangkok, Thailand
* Corresponding author
[1]Email: 1148953523@qq.com

**Abstract**

This study investigated the impact of short video user loyalty on marketing and its influencing factors in China. The researchers used a constructed questionnaire to collect needed data from 353 voluntary respondents. The statistical analyses included Cronbach's Alpha, Descriptive Data Analysis, Multiple Linear Regression, and Simple Linear Regression. The questionnaire carried Cronbach's Alpha at >0.7 from a group of thirty samples. The respondents' demographic data were analyzed for frequency, percentage, mean and standard deviation. Multiple linear regression was used to assess the impact of short video user loyalty on marketing and its influencing factors in China, as five potential variables: (i) interface design, (ii) corporate image, , (iii) quality of service (including privacy protection and use dependencies), (iv) price of goods, and (v) cost of conversion, as affecting customer satisfaction, and customer loyalty in short video marketing. The results showed that the factors identified as affecting Douyin users were at the significance level of 0.05. All five independent variables--(1) interface design, (2) corporate design, (3) service quality, (4) price of goods, and (5) cost of conversion had a significant effect on customer satisfaction, while customer satisfaction has a significant impact on customer loyalty in the marketing via short videos. The researchers concluded that short video marketing on Douyin platform should improve (1) interface design, (2) corporate design, (3) service quality, (4) price of goods, and (5) cost of conversion to keep customer satisfaction and loyalty in the long run.

*Keywords: Interface design, corporate image, service quality, product price, cost of conversion, customer satisfaction, customer loyalty*

## 1. Introduction

### 1.1 Background of the Study

The short video is a kind of Internet content transmission mode, generally referring to the video content based on a certain new media platform. The transmission time is within a few minutes. The development of science and technology and the impact of the international epidemic have promoted a change in people's entertainment and

lifestyle. Reliance on the net social networking, the Internet, short video entertainment, and social functions is becoming more and more dominant. Chinese netizens are more inclined to use mobile electronic devices to shop online, so a new marketing method--online live shopping has emerged due to the increasing popularity of online live shopping.

The market for mobile phone applications in China currently contains more than 40 different short video applications. According to the findings of a survey conducted by the China Business Intelligence Network in the first half of 2018, the most popular short video apps were as follows: Watermelon video, Douyin, Volcano video, Bobo video, Good-looking video, Short video, Micro video, and Zui You video. Douyin video is relatively new compared to other short video apps; however, it has quickly captured a significant portion of the market share (Li, 2019). This is primarily attributable to the fact that the app satisfies the audience's psychological needs, such as social interaction, psychological transformation, and respect, through precise positioning and combines successful online and offline promotion strategies (France et al., 2021). In addition, Douyin's video makes it easier for users to stay engaged by providing options like forwarding, commenting, and praising other users. The capability for simple video editing gives every user the ability to produce their own videos, significantly boosting users' interest (Lin et al., 2022; Tun Aung & Nuangjamnong, 2022).

According to the research report in 2018, Douyin data of the Second Hand System and Haimayun Big Data, the number of Douyin users has reached 150 million, and the active monthly index has reached 300 million (Chen & Xie, 2008). The age group of its users is mainly between 20 and 30 years old. This is enough to prove that Douyin greatly impacts people's entertainment lifestyle (Chen & Xie, 2008). In various data, the loyalty of short video users to Douyin is beyond doubt.

### 1.2 Problem Statements

The era of short video marketing has arrived, but the Chinese company that developed the short video application is having a difficult time, particularly when vying for new customers. Even though Douyin video has a strong performance in the domestic penetration market, this does not need or guarantee that it can be developed for a considerable amount of time in the future. At this point, the video that Douyin publishes needs to entice users and greatly increase user stickiness and loyalty. However, most of these studies explain why individuals enjoy watching short films by deriving their explanations from theory rather than conducting real research. Few pieces of published research have been done on short video applications in the United States and globally.

The subject of this case study is "Douyin," an operation representative of the domestic short video industry. This research aims to determine the value of user loyalty to short video platforms for marketing. It will also provide a synopsis of the unsuccessful features of other competing products and make recommendations for improving the short video business. Since Douyin has risen to the top of the domestic short video business, the researchers would like to investigate Douyin as a marketing method by examining the level of devotion to short video marketing exhibited by its viewers.

## 2. Objective of the Study

The research objective was to investigate the impact of short video user loyalty on marketing and its influencing factors in China.

The researchers expected to analyze five variables: (i) interface design, (ii) corporate image, (iii) quality of service (including privacy protection and use dependencies), (iv) price of goods, and (v) cost of conversion, in relation to customer satisfaction, and customer loyalty in short video marketing.

## 3. Research Questions

In this study, the research questions were:

(1) What are short video social users' loyalty and marketing characteristics?

(2) Do the five variables: interface design, corporate image, quality of service (including privacy protection and use dependencies), price of goods, and cost of conversion, have impact on customer satisfaction and customer loyalty to short video marketing?

(3) How can short video user loyalty in marketing on Douyin increase marketing performance, customer satisfaction, and customer loyalty?

## 4. Significance of the Study

In this study, the findings were expected to give the following benefits:

(1) Manage the main contradictions in the short video industry.

(2) With real user loyalty, the Douyin short video platform can guide users to use it correctly in a humanized manner.

(3) Short video marketers can appropriately plan and launch public service advertisements to facilitate and enrich users' entertainment places by taking the case of the Douyin short video platform as a guiding example.

The researchers expected the analysis of user loyalty and short video marketing can serve as a reference tool in expanding the brand influence, deepening user loyalty, and supporting the growth of the short video industry.

## 5. Scope of the Study

The respondents in this study were 353 Douyin users. The dependent variable of this study was the marketing influenced by the user loyalty to Douyin short videos in two dimensions "communication effect" and "sales effect," which, in turn, might be affected by five potential variables: interface design, corporate image, quality of service (including privacy protection and use dependencies), price of goods, and conversion cost--all having impact on customer satisfaction and user loyalty. The study made clear that the independent variable of user loyalty was set in the three dimensions: "content value," "user orientation," and "Douyin platform characteristics."

## 6. Literature Review

Through the above literature results, the author used (1) the hierarchy of needs theory, (2) S-R theory, (3) Ryan et al's model (value-satisfaction two-factor driving model) (1999), and (4) Yan Haoren's research model (2005) to verify the empirical

research on user loyalty to marketing in the short video industry. The verification process of this study was mainly to study the Douyin platform in short video marketing the relationship between user loyalty in the dimension of (1) the practicality of marketing, (2) interface design, (3) corporate image, (4) privacy protection, (5) usage dependence, (6) service quality, (7) commodity price, (8) switching cost, and (9) customer satisfaction.

### 6.1 Overview of User Loyalty at Home and Abroad

Loyalty, as a humanistic concept, has attracted the attention and Churchill (1942) introduced discussion of many scholars since it entered into the business field. Due to the differences in the academic backgrounds of scholars, the concept of customer loyalty is also different. Based on the research results at home and abroad, there are mainly three representative definitions: attitude loyalty theory, behavior loyalty theory, and synthesis theory. Scholars who hold attitude loyalty theory believe that customer loyalty is an emotional preference for products or services, which is reflected in customers' purchase intention and recommendation intention for products or services. In short, it is a positive attitude. Scholars who hold behavioral loyalty theory believe that customer loyalty is a behavior of continuous purchase or use of products or services, which can be measured from the aspects of, repurchase behavior and purchase frequency. The synthesis theory integrates the attitude loyalty theory into the behavior loyalty theory to explain consumers' purchase behaviors in reaction to the marketing stimuli.

### 6.1.1 International Research

Assael (1993) focused on the relationship between customer loyalty and customer behavior from the perspective of customer purchase behavior. Scholars who hold the synthesis theory have effectively combined the attitude loyalty theory and behavior loyalty theory and believe that customer loyalty is the unity of behavior loyalty and attitude loyalty. Jacoby & Chestnut (1978) believed that when analyzing customer loyalty, we should take into account both the actual purchase behavior of customers and their potential attitudes and preferences. Oliver (1980) explained that customer loyalty was a kind of deep commitment in a sense.

In the traditional research on the driving factors of customer loyalty, the researchers Reichheld & Teal (1996) believed that customer satisfaction determines customers' repeated purchases, word-of-word publicity, and customer loyalty, and improves the benefits of enterprises by preventing customers from switching. Wang (2002) believed that among many driving factors of customer loyalty, customer value, and customer satisfaction, as the full driving factors, which promote customer loyalty from both internal attitude and external behavior, while semi-driving factors, such as high conversion cost, high cognitive risk, and high investment only promote customers' repeated purchase behavior. Saengaran (2022) emphasized three salient factors in determining: the marketing communication performance of a firm: basic conditions, demand conditions, and facilitation from support industries.

### 6.1.2 National Research

Yan (2005) believed that factors affecting customer loyalty include driving and moderating factors. With the popularization and rapid development of the Internet, customer loyalty in the network environment has gradually become a hot topic for scholars. Most scholars believe online customer loyalty has much in common with traditional customer loyalty. In addition to transactional shopping websites, emerging portal websites, virtual communities, and SNS websites do not involve or rarely involve consumption behaviors, so there is a certain difference between online and traditional customer loyalty.

In the study of non-transactional websites, Zhang et al. (2012) pointed out that selection factors, satisfaction factors, and maintenance factors determine the user loyalty of blogs when studying the user loyalty factors of Chinese blogs. The influencing factors of user loyalty in virtual brand communities, community satisfaction, community identification, community trust, and perceived quality directly impact community loyalty, and perceived quality--all positively affects community loyalty through community satisfaction.

Yang et al. (2018) studied the user loyalty of SNS websites through a reasonable and feasible index system. He found that user satisfaction and user relational switching cost positively affected user loyalty in two dimensions, and three sizes of user value positively affected user satisfaction, among which social value was the largest. Xu (2013) explored Weibo user loyalty from the social dimension and pointed out that perceived familiarity and perceived similarity significantly affected perceived usefulness, user satisfaction, and user loyalty. Zheng (2012) studied the influencing factors of Douyin user loyalty; he found that the practical value of Douyin directly and significantly affected user loyalty, while the application value of Douyin, user satisfaction of Douyin and Douyin's word-of-mouth positively affected user loyalty.

### 6.1.3 Review of Short Video APP Research

With the continuous development of society, various mobile device softwares have appeared in people's lives, which greatly impact people's living habits. However, the rise of short video software is relatively late, so there is a lack of relevant research. Scholars' research on mobile short video software mainly includes the following points.

*6.1.3.1 Current Situation of International Research*

International studies on apps have considered the role of the application. For example, Kugler (2016) studied the part of app use in social and economic development. He analyzed the effect of apps in marketing activities, the important role of apps in shopping, watching short videos, and other processes. He explored the connection between mobile phone users and apps.

*6.1.3.2 Current Situation of National Research*

There has been research on the development status and future trends of mobile short video apps. Wang (2014) believed that under the social background of the mobile Internet, the social mode should eventually form the way of combining text, pictures, and videos. Wang et al. (2015) studied the development of mobile short video and believed that mobile short video was first developed abroad and then entered China. The mobile short video is growing rapidly in China, and the development situation is more

diversified. Wang (2016) took a short mobile video as an example for in-depth analysis. Wang (2016) analyzed the detailed process of mobile short videos finally introduced into China from foreign development. Wang (2017) believed that China's mobile short video was rapidly growing, with rich and diverse types of mobile short video software with rich content transmitted by a short video, and continuous improvement in video production and transmission technology.

Mobile short video apps marketing and profit model have attracted researchers' attention. Wu (2014) believed that the effect of using short videos for advertising was consistent with that of long videos. Marketers can add ads that match the video content according to the different video content. Advertising interaction and advertising promotion are required before the video play to achieve a short video marketing effect. Su (2014) believed there were three different marketing methods for short videos in China at the present stage. The first is to propose a hot topic through short video software to attract users to participate in the activity. The second is the publicity party officially establishing a short video account and using the version to push its propaganda video content and promote its brand. The third is to work with video celebrities with a huge number of followers and put their ads in short videos. In recent years, Bai (2016) analyzed the characteristics of short video and their promotional mode. First, a short video itself has the features of entertainment to promote content. Second, the short video social mode displays more explicit content than the traditional social method. As a result, short video production requirements are low, the production process is simple and convenient, and enterprises can use precision marketing for users.

As seen, scholars' research on short videos mainly discusses the development situation, development prospects, and development mode of short videos. There has been little research on short video software at the present stage, especially on the lack of user satisfaction surveys.

### 6.2 Review of Theories and Research Related to User Loyalty
### 6.2.1 Hierarchy of Needs Theory

The hierarchy of needs theory arranges human needs in a certain hierarchy, believing that humans often first meet their urgent needs in behavior and psychology and then consider the satisfaction of other needs. Proposed by the American scholar Maslow, the theory tries to explore the psychological dynamics of an individual at a certain stage and what reasons or needs drive specific behaviors (Tang et al., 2015). Maslow divided the complex needs of the actor into five different categories, from low to high, namely, physiological, safety, social, respect, and self-actualization (Tang et al., 2015). In Maslow's hierarchy theory, the actor first needs to meet the physiological needs, and after meeting the physiological needs, the actor pursues. The needs of the next level up will be the corresponding driving force. This theory provides a good theoretical basis for us to study an individual's behavior. The hierarchy of needs theory shows that the needs of actors do not appear or disappear without any root. The actor's demand constantly changes, and the actor's purchase behavior and potential psychological activities are driven by this demand (Tang et al., 2015). The implication is that after consumers' low-level needs are satisfied, they will have higher-level needs, and the rise of such needs

will generate corresponding purchase motives. The instructions for enterprises are that the satisfaction of enterprises to consumers should not only be reflected in price and quality but also consider that with the development of the social economy, they should focus on the development of brand extension value. The need theory shows that at a certain stage, one of the five needs of the actor is dominant, while the other needs are subordinate (Maslow, 1943).

### 6.2.2 The S-R Theory

The stimulus-response (S-R) theory explains the reasons for forming brand loyalty. When consumers have the corresponding demand, they will have the connected purchase motivation (Tang et al., 2015). In this process, influenced by brand, quality, price, and other factors, certain product brands will attract consumers' attention (Tang et al., 2015). Thus, brand awareness is initially established. In the cognition stage, consumers finally determine a certain brand of products as their purchase objects through comprehensive comparison and opinions of the people around them. They have their first purchase behavior (Tang et al., 2015). If the product purchased for the first time fails to meet consumers' expectations, the behavior of continuing purchase will not occur again (Tang et al., 2015).

The S-R theory holds that certain stimulus signals, such as price, product, or certain characteristics cause consumers' decisions. In the stimulation process by these signals, consumers gradually form a preference for a certain product or service and finally develop customer loyalty. With the gradual development of the motivation theory, scholars have also expanded the stimulus-response approach, believing there are intermediate links and learning mechanisms, such as forgetting, thinking, and judgment in the stimulus-response view (Hull, 1943).

In today's information explosion, the information consumers are exposed to have become difficult to distinguish between true and false. They begin to collect information through various channels and screen this information. On this basis, we make our own behavioral decisions based on experience and the evaluation of others. Finally, consumers will evaluate the purchase behavior according to the actual utility of the purchase and summarize the learning, which will serve as the reference for the next purchase behavior (Huang et al., 2019). As rational people pursue the maximization of their interests, consumers will choose products or brands based on the purchase results of the previous stage. Therefore, enterprises must make great efforts in their products' quality, characteristics, marketing, and brand building to meet consumers' expectations for related products. Only in this way, they can gradually establish consumers' loyalty (Huang et al., 2019).

**6.3 Theoretical Frameworks**
**6.3.1 Ryan Model (Value-Satisfaction Two-Factor Driving Model)**

**Figure 1:** A Diagnosing Customer Loyalty Drivers
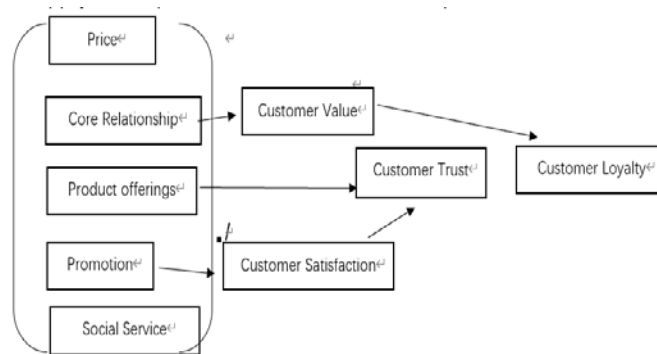


**Source:** Ryan et al. (1999)

Ryan et al. (1999) proposed that customer satisfaction and customer value contribute to customer loyalty with equal emphasis on price, core relationship, product supply, promotional activities, and social services, which work together in three aspects: customer value, customer satisfaction, and customer trust, thus affecting the formation of customer loyalty as shown in Figure 1.

**6.3.2 Yan Haoren Research Model**

The influencing factors and theoretical model of customer loyalty are obtained on the basis of Yan (2005) 's interview study on the short video industry. The driving factors and regulating factors of customer loyalty in the short video industry are subdivided, and user-customer loyalty is proposed. Yan (2005) innovatively proposed a situational regulation model for the formation of customer loyalty. He believed that customer loyalty is influenced by seven factors: (1) customer satisfaction, (2) customer trust, (3) switching cost, (4) product experience, (5) interest relevance, (6) alternative, and (7) product complexity. The innovation of Yan Hao-ren's research (2005) is that he introduced the regulating variable into the study of customer loyalty.

**6.4 Review of Theories and Studies Related to Independent Variables**
**6.4.1 Customer Satisfaction**

In the 2000 version of ISO/DIS9000, customer satisfaction means that an event's outcome fulfills the customer's needs or expectations. The event here refers to a specific event in which both parties have needs or expectations. Customer satisfaction is, therefore, an indicator that reflects how customers feel. If the customer's expectation of a product is higher than the result obtained, the customer is not satisfied with the development of that product. If the customer's expectations align with the event's outcome, the customer is pleased with the development of the event. When the result is better than expected, the customer feels particularly satisfied.

The English term for satisfaction is the Customer Satisfaction Index (CSI). Sweden created the first user satisfaction survey instrument (SCSB). In 1994, the United States introduced this instrument and, with some improvements, made the American

Customer Satisfaction Index (ACSI). The basic model used to evaluate these indices is a system of equations. It was developed by Zinkhan & Fornell (1989), professors at the University of Michigan School of Economics and Management and the National Quality Research Centre, and their team. In this model, customer expectations, perceived quality, and loyalty are used to evaluate customer satisfaction, and a general logic is created (Li, 2019). Wang (2014) found that the number of users on China's Douyin tends to grow slowly, and users are inactive. Competing for users and capturing users' attention remains a top priority for Douyin. Through research and analysis, he summarized the influencing factors of Douyin user satisfaction: switching costs and other factors positively impact Douyin user loyalty (Wang, 2014).

### 6.4.2 Interface Design

International studies on the combination of user experience and interface design were early. They formed relatively mature theoretical research and practical experience in various aspects and applied their research results to the mobile Internet, communication, financial, and other elements. In terms of theoretical analysis, the status quo of international academic research is analyzed from two parts of user experience and interface design of mobile devices, which are as follows:

From the perspective of user experience, Dion et al. (1972), Dion as a world-famous cognitive psychologist, in his book Emotional Design, discussed the importance of emotion in design from the three dimensions of behavior, instinct, and reflection and analyzed in detail how to integrate emotional effects into product design--implementing the people-oriented design principle. In the book *Elements of User Experience: User-Centered Product Design* written by Sussman & Siegal (2003), they argue that positive user experience refers to the goal that can be achieved by both users and organizations who create products. From the interface design perspective of mobile devices, there are also quite mature theoretical systems abroad. In the book *Mobile Device Interaction Design* written by Palmer et al. (2013), the interaction design of mobile devices is expounded from multiple perspectives, focusing on user experience research and elaborating on the people-oriented design concept. The necessity of practice and application of the complete design process in mobile devices is effectively put forward by Palmer et al. (2013).

### 6.4.3 Corporate Image

By definition, corporate image is the strength, values, and vision of an enterprise and it is an important tool for internal and external communication (Zheng, 2012). Berry (2000) defined corporate image identification as an enterprise's unique and lasting characteristics, which is a kind of commitment to customers. Taking Apple's mobile phone as an example, Zhao et al. (2018) proposed a general model of brand identification in their article, that is, demand-satisfaction-interaction-community identity-brand identification, and verified and analyzed it with the grounded theory. Good corporate image identification helps virtual brand community members to provide their community identification, and high community identification can help to improve community members' identification with the enterprise. Mazzalovo (2012) mainly brought in seven elements of brand identity, which can be divided into brand products, brand distribution region, brand existence time, advantages and disadvantages of brand products, brand

market position, the relationship between brand and stakeholders, and future development trend of the brand.  The researcher explained the necessity of each level and the role it plays in the market competition by citing cases of well-known brands.

### 6.4.4 Service Quality

There has been research focusing on specific marketing problems in the service industry. With the development of behavioral science, the theory of service marketing has attracted much attention. Behavioral scholars study the generation of judgment and memory in the process of human interaction, as well as the subsequent formation of personal preferences. They believe that customers' consciousness is the reality in the process of service generation, and what is really related to it is customers' feelings and evaluation of the service process. In the Internet advertising industry, the customers of the Internet platform include marketing agents and advertisers. Therefore, for enterprises, marketing agents and advertisers should be regarded as a leading force by improving customer satisfaction to establish customer loyalty. The Internet marketing agents referred to in this study mainly provide their clients with whole-case planning; for example, online media combined with traditional media advertising, offline activities, sales channel promotion, etc., can carry out a series of work from sales to brand promotion and the service. The network mentioned here not only refers to the Internet but also includes extranets, intranets, and the Internet of Things.

### 6.4.5 Price of Goods (Commodity Prices)

Wirtz & Crew (2002) put forward the 4R theory after a lot of theoretical and practical exploration, including reward, relationship, correlation, and reaction, which are reward, relationship, relevance, and reaction, respectively. According to the marketing theory, in the process of market development, the marketing level of enterprises should be constantly improved, the marketing methods should be more effective, the relationship between enterprises and customers should also be changed to some extent, and both parties should have stronger initiative. Orsingher & Wirtz (2018) noted in the current market environment that competition is increasingly fierce, and the key factors affecting competition, customer relationship, and customer value should receive more attention to by enterprises.

### 6.4.6 Cost of Conversion (Switching Costs)

Jackson (1985) proposed the definition of switching cost. Porter & Chen (1997) directly pointed out that conversion cost is a kind of exit barrier, and customers have to pay a certain price for changing product or service providers, so it will also play a very important role in consumers' decision to change.

In marketing, switching costs exist as a barrier to locking in customers. Lam et al. (2004) believed that switching costs were a kind of sunk cost, which involved the loss of time, money, and psychology of customers. Klemperer (1987) further explained that switching costs were composed of eight aspects, including evaluation costs.

**6.5 Research Framework**

The researchers only focused on five variables: interface design, corporate image, quality of service (including privacy protection and use dependencies), price of goods, and cost of conversion--hypothesized as affecting customer satisfaction and customer loyalty.

**Figure 2:** The Research Framework
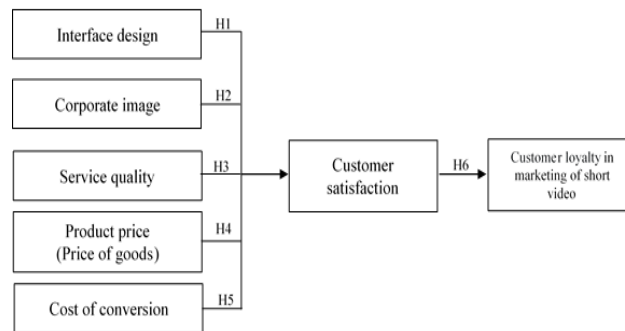


**Source:** Author (Wei He, 2023)

The hypotheses in this study are shown in detail below:

**H1o:** Interface design does not affect customer satisfaction toward customer loyalty in the short video marketing.

**H1a:** Interface design affects customer satisfaction toward customer loyalty in the short video marketing.

**H2o:** Corporate image does not affect customer satisfaction toward customer loyalty in the short video marketing.

**H2a:** Corporate image affects customer satisfaction toward customer loyalty in the short video marketing.

**H3o:** Service quality does not affect customer satisfaction toward customer loyalty in the short video marketing.

**H3a:** Service quality affects customer satisfaction toward customer loyalty in the short video marketing.

**H4o:** Product price does not affect customer satisfaction toward customer loyalty in the short video marketing.

**H4a:** Product price affects customer satisfaction toward customer loyalty in the short video marketing.

**H5o:** Cost of conversion does not affect customer satisfaction toward customer loyalty in the short video marketing.

**H5a:** Cost of conversion affects customer satisfaction toward customer loyalty in the short video marketing.

**H6o:** Customer satisfaction does not affect customer loyalty in the short video marketing.

**H6a:** Customer satisfaction affects customer loyalty in the short video marketing.

## 7. Research Methods and Materials

This study uses a constructed questionnaire to collect data from 353 voluntary respondents regarding the impact of user loyalty on short video marketing and its influencing factors. The questionnaire of this study was produced on the platform "Questionnaire Star" and distributed through WeChat groups, moments of friends, local forums, and other digital channels.

### 7.1 Research Design

The questionnaire design contains two parts: first, *the latent variables and their relationship,* which cannot be directly observed. According to the model structure and relevant assumptions that affect user loyalty to Douyin short videos organized above, the latent variables are confirmed as follows: (1) one outcome variable: user loyalty, (2) one intermediate variable: customer satisfaction, and (3) five initial variables: (i) commodity quality, (ii) service quality, (iii) commodity price, (iv) switching cost, and (v) corporate image. Second, *explicit variables* which can be regarded as the response indicators of specific latent variables; that is, specific measurement questions are designed according to the research hypotheses, and measurable questions are used to quantify and explain latent variables. Based on the research model and hypotheses, this study takes Douyin as a case study to examine the impact of user loyalty on Douyin's short video marketing.

### 7.2 Sampling Plan

The sample selection was based on an industry survey report by the professional organization Ariadne Consulting, which shows that Douyin and other emerging short video industries, and Douyin is the leading representative of the short video industry in China. The main consumer group was young people, mostly between the 1980s and 1990s; the gender distribution of consumers was similar; their income was in a high range with attachment to the quality of life and entertainment.

Therefore, the researchers of this study first selected 401 voluntary consumers who live in China and have purchased products through the Douyin App platform. They were employees of administrative agencies/ enterprises/ institutions, self-employed or freelance workers, and retirees.

### 7.3 Research Instrument

This study used a constructed questionnaire to survey the impact of short video user loyalty on marketing and its influencing factors. Four types of statistical were included: Cronbach's alpha, descriptive data analysis, single regression, and multiple regression. First, a sample group of 30 individuals was pretested to obtain the questionnaire's reliability by Cronbach's alpha. A descriptive data analysis was performed on the questionnaire response data. Next, a multiple regression analysis was used to determine the impact of consumer loyalty on short video marketing in China. The impact of seven potential variables listed: (1) product quality, (2) service quality, (3) product price, (4) switching costs, (5) corporate image, (6) customer satisfaction, and (7) consumer loyalty.

**7.4 Reliability Test (Pilot Test)**

The researchers used Cronbach's coefficient of agreement (alpha) to analyze the obtained descriptive data on the respondents' demographic information and their responses to the questionnaire items. of the target sample. Finally, single-item and multi-item regressions were used to examine effect sizes and to check for causal relationships between the dependent and independent variables.

Cronbach's Alpha rule of thumb; Cronbach's Alpha reliability coefficient angle association strength >0.9 excellent; >0.8 good; >0.7 acceptable; >0.6 problematic; >0.5 poor; and <0.5 unacceptable by Gliem and Gliem (2003). In a preliminary experiment, data were collected from 30 respondents and Cronbach's Alpha reliability tests were conducted to identify errors and to evaluate the internal consistency of the questionnaire. The mean Cronbach's alpha for each variable was greater than 0.7. The variables passed the reliability test and these variables were considered acceptable, good, and excellent questionnaire items.

**Table 1:** Pre-test Results by Reliability Test (Cronbach's Alpha)

| Variables | Number of Items | Cronbach's Alpha (α) | Strength Associated |
|---|---|---|---|
| Interface design | 3 | 0.986 | Excellent |
| Corporate image | 3 | 0.987 | Excellent |
| Service quality | 3 | 0.986 | Excellent |
| Price of goods | 3 | 0.958 | Excellent |
| Cost of conversion | 3 | 0.980 | Excellent |
| Customer satisfaction | 3 | 0.971 | Excellent |
| Customer loyalty | 3 | 0.976 | Excellent |

**Note:** n=30

**7.5 Methods of Data Gathering, Procedures, and Statistical Treatment of Data**

This study used a questionnaire platform to complete and collect the needed data. A total of 401 questionnaires was collected, and 353 valid questionnaires were verified to ensure complete responses at the rate of 88.03%.

This study used Jamovi software for descriptive data analysis with tested reliability and validity; the dependent and independent variables and intermediate variables were for correlation analysis and regression relationship analysis, between variables in the relevant literature. The effects of the marketing factors on short video user loyalty were obtained in support of the current user loyalty to Douyin's short video marketing.

The main statistical methods used in this study were as follows:

(1) Descriptive statistical analysis: The percentage and frequency statistics of the background data of the respondents. The characteristics of each dependent and independent variable, the intervening variables, and users' shopping habits were reported by percentages, means, and standard deviations.

(2) Reliability analysis used Cronbach's alpha to assess the degree of reliability of the constructed questionnaire; validity analysis aimed at content authenticity and validity of the constructed questionnaire as well as the questionnaire response data obtained from the respondents under study.

(3) Correlation analysis checked a relationship between the independent and dependent variables.

(4) Regression analysis examined the quantitative relationship between several variables and determine the causal relationship between them. In this study, linear and multiple regression analyses were used to investigate the existence and significance of significant regression relationships among the variables based on the respective research models and hypotheses mentioned earlier.

## 8. Results and Discussion

The researchers reported demographic characteristics, such as gender, age, occupation, educational background, and monthly income from 353 valid respondents. Table 2 shows the frequency and percentage of the obtained demographic data.

### 8.1 Descriptive Demographic Data

**Table 2:** The Respondents' Demographic Data by Frequency and Percentage

| Demographic Data | Frequency | Percentage |
|---|---|---|
| **Gender** | | |
| Female | 173 | 49% |
| Male | 180 | 51% |
| **Total** | **353** | **100%** |
| **Age** | | |
| Ages 15 to 19 | 34 | 9.6% |
| Ages 20 to 24 | 150 | 42.5% |
| Ages 25 to 29 | 80 | 22.7% |
| Ages 30 to 34 | 50 | 14.2% |
| Over 35 years old | 31 | 8.8% |
| Under 14 years old | 8 | 2.3% |
| **Total** | **353** | **100%** |
| **Occupation** | | |
| Civil servant/government workers | 18 | 5.1% |
| Enterprise/company staff | 87 | 24.6% |
| Freelancers | 45 | 12.7% |
| Individual and private owners | 50 | 14.2% |
| Retirement/unemployed | 2 | 0.6% |
| Science and education style health workers | 25 | 7.1% |
| Service personnel | 21 | 5.9% |
| Students | 105 | 29.7% |
| **Total** | **353** | **100%** |

| Demographic Data | Frequency | Percentage |
|---|---|---|
| **Education** | | |
| High school and the following | 51 | 14.4 % |
| Masters and above | 40 | 11.3% |
| Specialist | 100 | 28.3% |
| Undergraduate | 162 | 45.9% |
| **Total** | **353** | **100%** |
| **The habit of using short video App** | | |
| Occasionally | 167 | 47.3 % |
| Often | 117 | 33.1 % |
| Seldom watch | 69 | 19.5 % |
| **Total** | **353** | **100%** |
| **Kind of short videos** | | |
| About learning | 30 | 8.5% |
| Beauty makeup video | 19 | 5.4% |
| Entertainment stars | 29 | 8.2% |
| Food, share daily | 56 | 15.9% |
| Funny video | 91 | 25.8% |
| Game live | 30 | 8.5% |
| Hotties | 24 | 6.8% |
| Life common sense | 15 | 4.2% |
| Social news | 32 | 9.1% |
| Sporting events | 22 | 6.2% |
| Other | 5 | 1.4% |
| **Total** | **353** | **100%** |
| **Monthly income** | | |
| Below 1000 CNY | 67 | 19.0% |
| 1001 ~ 1400 CNY | 15 | 4.2% |
| 1001 ~ 5000 CNY | 120 | 34% |
| 5001 ~ 8000 CNY | 82 | 23.2% |
| 8001 ~ 10000 CNY | 61 | 17.3% |
| Above 14000 CNY | 8 | 2.3% |
| **Total** | **353** | **100%** |
| **Spend time on short videos every day** | | |
| 1 ~ 2 hours | 75 | 21.2% |
| 2 ~ 3 hours | 109 | 30.9% |
| Below 1 hour | 33 | 9.3% |
| More than 3 hours | 136 | 38.5% |
| **Total** | **353** | **100%** |
| **Will make a purchase** | | |
| can, often | 93 | 4.2% |
| will, occasionally will not | 260 | 73.7% |
| **Total** | **353** | **100%** |

**Note**：n=353

Table 2 shows the large/ dominant groups in each demographic variable as follows:

- Gender: the respondents were quite proportional with male at 51% and female 49%.

- Age: The large age groups of the respondents were 20-24 at 42.5%, followed by 25-29 at 22.7%
- Occupation: The large occupation groups of the respondents were students at 29.7%, followed by company employees at 24.6%.
- Educational Background: The educational background of the respondents were undergraduates at 45.9% and specialists at 28.3%.
- Frequency of Use: Occasionally at 47.3% and often at 33.1%.
- Types of Short Videos Watched: Funny video at 25.8%, followed by Food, share daily at 15.9%.
- Monthly Income: 1001-5000 CNY at 34%, and 5001-8000 CNY at 23.2%.
- Time Spent Watching Short Videos Daily: The highest proportion was more than 3 hours at 38.5%, and less than 2-3 hours at 30.9%.

## 8.2 Descriptive Analysis of Responses by Mean and Standard Deviation

The researchers analyzed seven variables by mean and standard deviation: (1) interface design, (2) corporate image, (3) service quality, (4) product price, (5) switching costs, (6) customer satisfaction and (7) customer loyalty. All responses were evaluated by the five categories in the Likert-5 quantity scale interpreted as: 4.51-5.00 as "strongly agree," 3.51-4.50 as "agree," 2.51-3.50 as "neutral," 1.51-2.50 as "disagree," and 1. 00-1.50 is interpreted as "strongly disagree." The results are shown in Table 3.

**Table 3:** Response Categories by Mean and Standard Deviation

| Interface Design | Mean | Standard Deviation | Interpreted |
|---|---|---|---|
| **ID1:** I think the interface design of Douyin is simple and beautiful. | 3.53 | 0.78 | Agree |
| **ID2:** I think the interface navigation design of Douyin is reasonable and the functions can be switched easily. | 3.63* | 0.74 | Agree |
| **ID3:** I think interface design can stimulate my interest. | 3.57 | 0.80 | Agree |
| **Corporate Image** | | | |
| **CI1:** I think Douyin has a good social reputation. | 3.52 | 0.79 | Agree |
| **CI2:** I think Douyin has been widely used by social celebrities. | 3.58* | 0.79 | Agree |
| **CI3:** I think the functions and services provided by Douyin have been well received by users. | 3.58* | 0.76 | Agree |
| **Quality of Service** | | | |
| **QS1:** I think the store Douyin bought is consistent with the marketing in the video. | 3.51 | 0.80 | Agree |
| **QS2:** I think the logistics and after-sales service staff of Douyin have a good attitude. | 3.52* | 0.80 | Agree |
| **QS3:** I think Douyin dealt with the after-sales problem quickly and the remedy plan is satisfactory to me. | 3.48 | 0.82 | Agree |
| **Price of Goods** | | | |
| **PG1:** I often put up with the things I want until they're on sale. | 3.48* | 0.79 | Agree |

| Interface Design | Mean | Standard Deviation | Interpreted |
|---|---|---|---|
| **PG2:** I am often attracted to shopping by Douyin's discount activities. | 3.47 | 0.71 | Agree |
| **PG3:** I think the price of Douyin is more favorable. | 3.46 | 0.77 | Agree |
| **Cost of Conversion** | | | |
| **CC1:** I have put a lot of time and energy into using Douyin. | 3.44 | 0.79 | Agree |
| **CC2:** If I switch to other social applications, I think the search and evaluation will take more time and effort. | 3.45* | 0.75 | Agree |
| **CC3:** If I switch to other social apps, it will take me some time to learn new techniques and methods. | 3.42 | 0.80 | Agree |
| **Customer Satisfaction** | | | |
| **CSAT1:** I think Douyin can make me feel satisfied. | 3.53* | 0.73 | Agree |
| **CSAT2:** I shopped more on Douyin than any other short video app. | 3.48 | 0.82 | Agree |
| **CSAT3:** Compared with other short video software, I prefer to choose Douyin platform first. | 3.50 | 0.78 | Agree |
| **Customer Loyalty** | | | |
| **CL1:** I would like to continue using Douyin in the future. | 3.51* | 0.79 | Agree |
| **CL2:** I will regularly browse product information on Douyin platform and purchase suitable products. | 3.41 | 0.77 | Agree |
| **CL3:** I would like to recommend Douyin platform to others. | 3.50 | 0.76 | Agree |

**Note:** * The highest mean

Table 3 presents the mean values of the problem terms in each variable. The highest corporate image issue is "I think the interface navigation design of Douyin is reasonable and the functions can be switched easily" (mean=3.63, S.D.=0.74). For corporate image, the questions with the highest mean are "I think the functions and services provided by Douyin have been well received by users" (mean=3.58 S.D.=0.76), and "I think Douyin has been widely used by social celebrities" (mean=3.58 S.D.=0.79).

As for the quality of service, the title with the highest mean value is "I think the logistics and after-sales service staff of Douyin have a good attitude" (mean=3.52 S.D.=0.80). For price of goods, the title with the highest mean is "I often put up with the things I want until they're on sale" (mean=3.48 S.D.=0.79). For the cost of conversion, the title with the highest mean was "If I switch to other social applications, I think the search and evaluation will take more time and effort" (mean=3.45 S.D.=0.75). For customer satisfaction, the item with the highest mean value is "I think Douyin can make me feel satisfied" (mean=3.53 S.D.=0.73). For customer loyalty, the item with the highest mean value is "I would like to continue using Douyin in the future" (mean=3.51 S.D.=0.77).

### 8.3 Hypothesis Testing Results

**Table 4:** Multiple Linear Regression for H1, H2, H3, H4, H5

| Hypotheses | t-value (>1.96) | p-value | VIF | Decision |
|---|---|---|---|---|
| H1: Interface design →Customer satisfaction | 2.97 | 0.003* | 2.47 | Supported |
| H2: Corporate image→ Customer satisfaction | 4.15 | < .001* | 3.02 | Supported |
| H3: Service quality→ Customer satisfaction | 3.16 | 0.002* | 3.13 | Supported |
| H4: Price of goods → Customer satisfaction | 2.37 | 0.019* | 3.20 | Supported |
| H5: Cost of conversion → Customer satisfaction | 6.20 | < .001* | 2.67 | Supported |

**Note:** R square=0.67, Adjust R square=0.67, *p < .05, Dependent Variable=Customer satisfaction

H1 in Table 4, p-value is less than 0.05 at the 95% confidence level. It can be concluded that interface design has an impact on customer satisfaction. Therefore, Hypothesis H1o was rejected, Hypothesis H1a is valid. All VIFs were lower than 5, meaning that there was no multicollinearity problem.

H2 in Table 4, p-value is less than 0.05 at the 95% confidence level. It can be concluded that corporate image has an impact on customer satisfaction. Therefore, Hypothesis H2o was rejected, Hypothesis H2a is valid. All VIFs were lower than 5, meaning that there was no multicollinearity problem.

H3 in Table 4, p-value is less than 0.05 at the 95% confidence level. It can be concluded that service quality has an impact on customer satisfaction. Therefore, Hypothesis H3o was rejected, Hypothesis H3a is valid. All VIFs were lower than 5, meaning that there was no multicollinearity problem.

H4 in Table 4, p-value is less than 0.05 at the 95% confidence level. It can be concluded that product price has an impact on customer satisfaction. Therefore, Hypothesis H4o was rejected, Hypothesis H4a is valid. All VIFs were lower than 5, meaning that there was no multicollinearity problem.

H5 in Table 4, p-value is less than 0.05 at 95% confidence level. It can be concluded that switching costs have an impact on customer satisfaction. Therefore, Hypothesis H5o was rejected, Hypothesis H5a is valid. All VIFs were lower than 5, meaning that there was no multicollinearity problem.

**Table 5:** Simple Linear Regression for H6

| Hypotheses | t-value (>1.96) | p-value | VIF | Decision |
|---|---|---|---|---|
| H6: Customer satisfaction →Customer loyalty | 20.73 | < .001 | 1 | Supported |

**Note:** R square=0.56, Adjust R square=0.55, *p < .05, Dependent Variable= Customer loyalty

H6 in Table 5, p-value is less than 0.05 at the 95% confidence level. It can be concluded that Customer satisfaction has an impact on Customer loyalty. Therefore, Hypothesis H6o was rejected, Hypothesis H6a is valid. All VIFs were lower than 5, meaning that there was no multicollinearity problem.

## 9. Conclusion

In this study, the researchers identified the factors influencing over short video user loyalty in Douyin's marketing and obtained the major findings as follows:

(1) The results showed five factors that impact short video customer satisfaction: (1) interface design, (2) corporate image, (3) service quality, (4) product price, and (5) switching costs of short videos. Customer satisfaction in turn affects short video customer loyalty. The respondents were of opinion that short video marketing can sustain user loyalty in the short video industry. Short video platform marketing can rapidly reach the target audience and increase the impact of shared information by fostering strong relationships within online communities (Chen & Xie, 2008; Li, 2019; France et al., 2021). Therefore, platform marketers in the short video industry must consider how to improve the result of interface design, corporate image, service quality, product price, and switching costs to promote customer satisfaction and customer loyalty.

(2) Short video users of Douyin can explain the decisive factors that lead them to choose a certain short video platform over its competitors, thus making other users aware of the competing short videos. Short video users can understand why they choose this platform through discussion and knowledge sharing (Lin et al., 2022; Saengaran, 2022; Tun Aung & Nuangjamnong, 2022), thus strengthening customer satisfaction, customer loyalty, and the cohesion of Douyin.

As shown in the major findings, the study confirmed that most managers are concerned about the impact of short video user loyalty on generating a competitive advantage. Since the advent of social media, marketing strategies, and tools have changed dramatically. After the increase in switching costs, Douyin's users no longer needed to switch short video platforms to obtain information about similar products and services because a short video platform could effectively and conveniently provide such information. Therefore, short video marketers must devise effective methods to improve interface design, corporate image, service quality, product price, switching cost, and customer satisfaction to achieve the established marketing goals. According to the study, if short video users can successfully help users build deep user loyalty, it will promote a strong relationship between short video users and the Douyin platform, leading to the formation of customer or guest loyalty. In such a scenario, Douyin platform could apply the major findings of this study by enhancing interface design, corporate image, service quality, product price, and effective management of switching costs for customer satisfaction and loyalty to cope with other competitors in the short video industry.

## 10. Limitations of the Study

The researchers of this study identified limitations in the study regarding sample size, and the scope of the Chinese market. The results may not be able to generate implications for the marketing contexts of other countries. However, the case study of Douyin could serve as a guide for the marketing variables to be explored by other short video platforms. As emphasized by the researchers, user loyalty is highly dynamic and deserves a great deal of attention from all parties or stakeholders concerned.

## 11. The Authors

Wei He, Kitikorn Dowpiset, Ruengsak Kawtummachai, Chompu Nuangjamnong are researchers and lecturers in the Master of Science Program in Management, the Graduate School of Business and Advanced Technology Management, Assumption University of Thailand, Bangkok. The authors share their research interest in the areas of digital marketing, consumers' brand loyalty, and forefront issues in advanced technology management.

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