



# The Impact of Flow Experience and Emotional Contagion on User Stickiness in Social E-commerce Activities: A Case Study of Xiaohongshu

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**Abstract.** Social e-commerce, as an important form of electronic commerce, has witnessed rapid development worldwide in recent years. This paper focuses on the social e-commerce platform Xiaohongshu (Little Red Book) to explore the influence of flow experience and emotional contagion on user stickiness in social e-commerce activities. Although existing research has explored user behavior in e-commerce, the combined effects of flow experience and emotional contagion on user stickiness in social e-commerce platforms have not been extensively studied. This study adopted a questionnaire survey approach with a sample of 162 young students as the primary participants to investigate and analyze their usage behavior on the Xiaohongshu platform. The research findings indicate that flow experience and emotional contagion during social e-commerce activities significantly impact user stickiness. Flow experience notably enhances user stickiness on the platform, while emotional contagion also contributes to increased user attachment to the platform to a certain extent. Therefore, social e-commerce platforms should prioritize enhancing users' flow experience to provide a smoother and more enjoyable user experience. Additionally, platform operators should actively foster a positive social atmosphere to elevate users' emotional attachment to the platform through emotional contagion. Furthermore, by incorporating personalized features, social e-commerce platforms can deliver tailored content to increase user engagement and stickiness. In conclusion, this study provides valuable theoretical and practical insights into understanding user behavior and stickiness formation mechanisms in social e-commerce. It offers effective operational strategies and improvement directions for relevant platforms. However, the study is subject to limitations in terms of the sample population. Future research can expand the sample range and consider additional factors for more comprehensive investigations.

**Keywords:** Social e-commerce, Flow experience, Emotional contagion, User stickiness, Xiaohongshu (Little Red Book).

## 1 Introduction

This article aims to explore in-depth how flow experience and emotional contagion influence user stickiness in social e-commerce activities, with Xiaohongshu (Little Red Book) as the selected case for analysis. In the modern society, there is a growing emphasis on integrating e-commerce with social interactions to meet consumers' needs for communication, information acquisition, participation, and sharing, thereby establishing sustainable emotional connections among consumers. Hence, the exploration of how flow experience and emotional contagion impact user stickiness in social e-commerce activities becomes of utmost importance.

Social e-commerce activities center on the integration of traditional e-commerce models with social scenarios, where the core idea is to organically combine sharing with the concept of a store, allowing consumers to engage in unique buying and selling experiences within partner communities. Social e-commerce activities create an atmosphere where consumers can participate in joint activities and share unique experiences, enhancing the enjoyment and pleasure of shopping. User stickiness, in this context, is reflected in the frequency of repeated purchases by consumers within this model.

Taking Xiaohongshu as an example, users can post content, exchange messages, participate in activities, and shop, and the platform emphasizes creating diverse and interesting experiences to cater to users' multiple demands. Examples of such experiences include limited-time flash sales, "Heartbeat Box" (a personalized shopping feature), and brand events. Through these diverse activities, Xiaohongshu not only offers flexible shopping options to users but also helps them gain a sense of accomplishment through popular and trendy sharing, leading to a more profound experience of joy and happiness in the activities. This, in turn, increases user engagement and stickiness, providing users with various emotional experiences and different dimensions of engagement.

Furthermore, Xiaohongshu places a strong emphasis on evoking emotions during activities, such as consumer sharing, social gatherings, and emotional exchange. These elements create a warm and affectionate sentiment among participants, fostering a sense of intimacy at an emotional level, leading to the formation of social perception. This significantly increases user stickiness during activities.

In conclusion, flow experience and emotional contagion have a significant impact on user stickiness in social e-commerce activities. Taking Xiaohongshu as an example, the diverse activity experiences and emotional resonance create a warm sense of social perception, making it easier for users to become immersed and thus further enhancing user engagement and stickiness, leading to continuous and enthusiastic participation. The development of social e-commerce offers new opportunities for businesses and provides users with delightful shopping experiences. Flow experience and emotional contagion are the key factors determining user stickiness and should be given due attention by businesses. In the future, businesses can continually improve the social e-commerce model, actively engage in diverse social activities, strengthen interaction and emotional connections with users, expand user communities, and further enhance stickiness, thus creating a more enjoyable social e-commerce experience.

## **2 Relationship Between Flow Experience, Emotional Contagion, and User Stickiness**

### **2.1 User Stickiness**

User stickiness refers to the user's perception of a target website, characterized by repeated visits and usage of the website, with the belief of continued future usage without much consideration of other circumstances or switching costs (Zhou Junjie, 2015) [1]. The concept of stickiness initially emerged in the field of the internet. In recent years, with the rapid growth of China's online shopping market and the emergence of numerous live-streaming e-commerce platforms, user stickiness has become a core element for these live-streaming platforms to enhance their competitiveness. Research has shown that as consumers engage in more transactions and spend more time on a website, their stickiness towards that website increases, leading to a higher willingness and volume of transactions (Zott, Amit, Donlevy, 2000) [2]. Hence, factors like time spent and visit frequency become primary indicators to express user stickiness.

The social and psychological interactions between online products or platforms and users play a significant role in influencing user stickiness. Research has confirmed that there is a positive correlation between trust based on goodwill and ability and user stickiness in social media (Zhou Junjie, 2015). Additionally, perceived social influence of a website can enhance user stickiness. Consequently, many social e-commerce platforms use various methods such as enhancing blogger credibility, popularity, and communication to create a trustworthy atmosphere, with the aim of increasing users' willingness and satisfaction through a positive experience.

### **2.2 Relationship Between Flow Experience and User Stickiness**

Flow experience refers to a state in which an individual engaging in activities or work they enjoy becomes completely immersed in the activity and experiences a sense of timelessness and detachment from the real world, resulting in a state of enjoyment (Xiong Wei, Wang Shupan, Pan Qiong, 2015) [3]. Ghani and Deshpande identified two crucial aspects of flow experience: complete engagement in an activity and experiencing pleasure from the activity, leading to a loss of time perception (Xiong Wei, Wang Shupan, Pan Qiong, 2015). Research on portal websites has found that flow experience affects users' continuous usage behavior on the website. Studies on the formation mechanism of user stickiness in online platforms indicate that flow experience and satisfaction have a significantly positive impact on users' intention to continue using the platform. Some argue that user stickiness is reflected in increased visit time and frequency, with flow characteristics being a critical factor contributing to this phenomenon (Xiong Wei, Wang Shupan, Pan Qiong, 2015). Research by Tao Zhou et al. shows that flow experience can promote loyalty among social media users. The weakening of time perception is an outward manifestation of flow experience, while extended stay is a significant feature of user stickiness. Simultaneously, when users experience flow, they gain a sense of pleasure and fulfillment, and another character-

istic of user stickiness is the willingness to repeatedly return to the platform. The research results of Xiong Wei and others suggest that the stronger the perceived usefulness of social software, the higher the level of flow experience among mobile social media users. Therefore, by increasing interactivity, entertainment value, and involvement, social e-commerce platforms can elevate users' level of flow experience, thereby achieving higher user stickiness (Xiong Wei, Wang Shupan, Pan Qiong, 2015).

Therefore, this paper proposes the research hypothesis H1: Flow experience positively affects user stickiness.

### 2.3 Relationship Between Flow Experience and Emotional Contagion

Flow experience essentially aims to put users in a state of pleasant emotional experience. Hence, users' emotional contagion ability acts as an intermediary variable determining whether flow experience enhances user stickiness. Emotional contagion refers to the process in which individuals consciously or unconsciously influence their own emotions after perceiving emotional information from others (facial expressions, voice, posture, actions, etc.), leading to the emergence of emotions similar to or the same as others. It is a bottom-up process of emotional generation (Zhang Qiyong, Lu Jia-Mei, 2013) [4].

Given the rapid development of social e-commerce platforms, such as social platform-based e-commerce (e.g., WeChat-based social commerce) and e-commerce platform-based socialization (e.g., Taobao influencers, Taobao live streaming), Xiaohongshu (Little Red Book) has emerged as a rapidly growing social e-commerce platform in recent years, focusing on shopping sharing and cross-border e-commerce. Users make purchases by viewing carefully curated promotional articles by bloggers or through live streaming sessions. Many bloggers even attract a large number of followers with simple images and texts, leading to impulsive purchases by many users. As such, Xiaohongshu also differentiates advertising and marketing strategies based on gender roles and user preferences (Li Jiaqi, Wu Xiaoying, 2020) [5]. Therefore, exploring the impact of flow experience on high user stickiness and the role of user emotional contagion in influencing the relationship between flow experience and user stickiness is of great significance for the use and management of social e-commerce platforms.

Hence, the research hypothesis H2 is proposed: Emotional contagion positively affects user stickiness.

## 3 Research Method

This study employed a questionnaire survey to explore the relationship between flow experience, emotional contagion, and user stickiness in social e-commerce platforms.

### 3.1 Participants

The study focused on users of Xiaohongshu (Little Red Book) as the primary analysis target. Therefore, the questionnaire was distributed to a large audience of college students, mainly through social platforms such as QQ, WeChat, and Weibo, using the online survey platform "Wenjuanxing." Incentives in the form of red envelopes were provided to encourage participation. A total of 162 questionnaires were distributed, and 97 valid responses were received, resulting in an effective response rate of 59.8%. The characteristics of the sample are presented in Table 4.

### 3.2 Research Instruments

Variables were measured using scales, including the measurement of consumer purchasing intention (5 items), flow experience (4 items), and emotional contagion (25 items). This section of the questionnaire utilized a five-point Likert scale, where "1" represents "completely disagree," and "5" represents "completely agree." Higher scores indicate a higher level of agreement.

#### 3.2.1 Scale Design.

After reviewing relevant studies on each variable, mature scales verified by scholars were carefully adjusted and optimized to establish the scales used in this study. The concepts of the variables have been clarified in the previous section. The following will introduce the measurement of the three variables: purchasing intention, flow experience, and emotional contagion. When designing the measurement items, the expressions were made more colloquial without altering the original intent of the scale. This was done to ensure that the respondents could understand the items easily and express their true opinions through the questionnaire.

##### *(1) Purchasing Intention.*

The measurement of the purchasing intention variable was based on Dodds' scale(2000)[6]. It comprised five items as shown in Table 1. The average of these five items ( $M = 3.36$ ,  $SD = 0.78$ ,  $\alpha = 0.856$ ) was calculated to represent the purchasing intention of the sample population. Therefore, the internal consistency reliability of the measurement model was good.

**Table 1.** Scale of purchase willingness

number	Question item
PI1	If I want the items recommended by the short video, I will consider buying them
PI2	I would like to try the products recommended by short videos
PI3	I would recommend products purchased via a short video to my family or friends
PI4	I will pay more attention to the brand of the products recommended by the short videos
PI5	I will take the initiative to share my experience of buying products in short videos with my relatives and friends

Annex 2: The PI is the purchase intention, Reference source: Dodds

(2) *Flow Experience.*

The flow experience scale was adapted from the study by Chang & Zhu [7]. The measurement of the flow experience variable comprised four items, as shown in Table 2. The average of these four items ( $M = 3.35, SD = 0.95, \alpha = 0.898$ ) was calculated to represent the flow experience of the sample population. Therefore, the internal consistency reliability of the measurement model was good.

**Table 2.** The Heart Flow Experience Measurement Scale\

number	Question item
FE1	When watching videos or shopping through short video software, I forget about other things for a while
FE2	I was very focused on watching videos or shopping through short video apps
FE3	When watching videos or shopping through short video software, I think time passes quickly
FE4	I feel happy when watching videos or shopping through short video apps

Note 3: FE is the heart flow experience, Reference source: Chang&Zhu

(3) *Emotional Contagion.*

The emotional contagion questionnaire holds a crucial position in the field of emotional research and even in personality research. Based on Doheay's emotional contagion questionnaire and incorporating numerous research findings on emotionally susceptible individuals, this study also referred to emotional contagion sensitivity questionnaires developed by Omdahl and O'Donnell (1999) and Verbeke (1997). A preliminary Chinese version of the "Emotional Contagion Questionnaire" was created. As shown in Table 3 [8]. The average of the five items ( $M = 3.59, SD = 0.75, \alpha = 0.955$ ) was calculated to represent the emotional contagion of the sample population. Therefore, the internal consistency reliability of the measurement model was good.

**Table 3.** Emotional infection questionnaire

project	Factor planted lotus			
	glad	love	Hazard	indignation
(6) When I feel lost, being with happy people will make me happy				
(3) When someone smiles at my heart, I will feel very warm inside				
(10) In a group of happy people, my heart will be full of happiness				
(17) When I see the happy plot, I will smile happily from the heart				
(14) When I see people laugh, I will also feel happy				
(7) I get excited when I see someone reunited				
(5) When I see my loved ones sad, I will be more sad than he / her				
(19) When my parents pat my body, I will feel very warm				
(13) When I see the happy expressions of my loved ones, I am happier than him / her				
(21) When I am about to travel to see my loved ones reluctant to part, I always can not restrain my tears				
(18) To alarm the victims when they see them on TV				
(2) When the people around you feel great pressure. I would be nervous, too				
(15) I will also feel uneasy when I see my child crying loudly				
(12) I will also feel nervous when dealing with nervous people				
(20) I feel very nervous when I see someone speak, and I also feel uneasy				
(1) When I see angry expressions, I tighten my cheeks and feel angry				
(8) I am also provoked when I am surrounded by a group of angry people				
(16) I feel uneasy when I hear a noisy and angry quarrel				
(23) I also feel uneasy when I see the people I associate with get angry				
(25) When I see someone angry on TV, I feel angry				
(4) If the person I talk to starts to cry, I will cry, too				
(9) When someone tells me that my loved one has died, I also feel sad				
(24) When watching moving movies, I will cry very easily				
(22) When I see others cry, I feel sad even though I don't know what happened				
(11) I feel sad when I see the pain expressions of others in the newspaper				

**3.2.2 Procedure**

In this study, to effectively avoid interference from factors such as respondent compliance and considering the limitations of the researchers' resources, an online questionnaire survey will be conducted targeting both students and teachers.

**4 Results of the study**

**4.1 Sample distribution characteristics**

**Table 4.** Sample Distribution Characteristics

	feature	Quantity (N=97)	the proportion of (%)
sex	male	19	19.6
	female	78	80.4
age	<18	9	9.3
	18~22	79	81.4
	22~30	8	8.3
	>30	1	1

**4.2 Correlation Analysis**

After conducting data analysis, it was found that there is a significant positive correlation between flow experience and purchasing intention ( $R=0.601, p<0.01$ ). Additionally, flow experience and emotional contagion also show a significant positive correlation ( $R=0.573, p<0.01$ ), as well as purchasing intention and emotional contagion ( $R=0.578, p<0.01$ ). Therefore, the initial hypotheses received relevant validation, and the correlation analysis results align with the directional assumptions of this study, providing evidence for hypothesis testing of the model.

**4.3 Hypothesis Testing**

Consistent with the hypotheses, flow experience and emotional contagion together explain the purchasing intention well ( $R^2 = 0.443$ ). After fitting the sample data to the theoretical model, in order to obtain robust parameter estimates, this study used the Bootstrap resampling method ( $N = 5,000$ ) with PLS-SEM empirical results as shown in Table 5. Specifically, emotional contagion and flow experience both significantly predict purchasing intention. Flow experience has a positive effect on purchasing intention ( $\beta_1 = 0.402, p<0.05$ ). At the same time, emotional contagion also influences purchasing intention ( $\beta_2 = 0.348, p<0.001$ ), indicating that stronger flow experience and emotional contagion lead to stronger user stickiness. Both hypotheses were validated.

**Table 5.** Hypothesis Test Results

Hypothesis	Path Coefficient	Standard Error	T price	Result
H1: Flow experience positively influences user stickiness.	0.329	0.077	4.281	Established
H2: Emotional contagion positively influences user stickiness.	0.360	0.097	3.706	Established

## 5 Conclusion

This study investigated the influence of flow experience and emotional contagion on user stickiness in social e-commerce activities, using Xiaohongshu (Little Red Book) as the research object. The main research findings indicate that flow experience and emotional contagion significantly impact user stickiness, providing important insights for the operation and user retention of social e-commerce platforms.

Firstly, flow experience plays a crucial role in social e-commerce activities. When users can experience flow states on social e-commerce platforms, fully engaged in the activities, and feeling challenged and accomplished, they are more likely to form stickiness to the platform, leading to higher user retention and activity.

Secondly, emotional contagion also influences user stickiness to some extent. A positive and uplifting social atmosphere on the platform, along with emotional transmission among users, can deepen users' emotional attachment to the platform and enhance user stickiness.

Additionally, three points related to the research results were discussed:

(1) Possible influence of gender ratio on the data results. As observed from the sample distribution, female users appear to be more frequent users of Xiaohongshu, and they might be more susceptible to emotional influence, which may lead to a more significant impact of flow experience and emotional contagion on female user stickiness. To validate the universality of this study, future research can use larger and more balanced samples of male and female users to explore gender differences in social e-commerce activities and their impact on user behavior.

(2) The impact of age on user stickiness. As social e-commerce platforms' user base becomes increasingly younger, younger users are more likely to experience flow and emotional contagion, leading to higher user stickiness. Therefore, platforms should focus on catering to the needs of young users, providing content and activities that appeal to them. While this study solely focused on Xiaohongshu as the platform for research and found that it attracts more young users, it should be noted that some older users may prefer using platforms like WeChat and Douyin. Therefore, future investigations can include different age groups and incorporate various platforms for a more comprehensive study.

(3) The impact of other social e-commerce platforms. Although this study used Xiaohongshu as a case study, other social e-commerce platforms may exhibit similar effects of flow experience and emotional contagion. Future research can broaden its focus to include other platforms, comparing the similarities and differences in user



behavior and stickiness between various platforms, providing valuable insights for platform operations.

In conclusion, the research findings deepen our understanding of social e-commerce user behavior and the mechanisms behind user stickiness. They also offer substantial recommendations and insights for the operation and improvement of social e-commerce platforms. However, there are still some aspects that require further exploration, demanding broader research and data support to refine and expand the conclusions of this study.

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