



Influencing Factors of Consumers' Psychological Resistance in TikTok Live Streaming Room

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Abstract. Analyze the user's psychological resistance influence factors and mechanisms on the live broadcasting mechanism, brings revelation for short video platform precision marketing. Establishment of the live recommendation mechanism generates a mental resistance model, issue a questionnaire to conduct empirical research. The results show that the recommendation timing, recommendation matching and external pressure will create compulsive perceptions on the user; the recommendation time, recommendation correspondence, and the pressure of the external area will produce perceptive privacy violations on the users. Compulsory perception, perception privacy violation and perception manipulation intentions will all create psychological resistance to the user.

Keywords: Psychological resistance · Consumer Psychological · Live broadcasting mechanism

1 Introduction

Live broadcasting has grown more and more mature – with the explosive growth of short video platforms, e-commerce live broadcasts have grown hot. As of June 2021, China's e-commerce live streaming user scale was 3.84 billion, accounting for 38% of netizens as a whole; in 2021, the China live streaming e-commerce market scale is approximately 13165 billion yuan. Live e-commerce has become an important way for enterprise marketing digital transformation. However, the “2022 (up) China live broadcast e-commerce market data report” released by the E-commerce Research Center of NETEC shows that the transaction scale is expected to reach 348979 billion yuan in 2022, up from 47.69%. Before this, the growth rate in 2018 was 589.46%, and the 2019–2020 growth rate was 227.7% and 136.61%, respectively, maintain a three-digit growth rate. It is worth noting that this is from 2021, the growth rate of live broadcasting e-commerce for the first time dropped to two digits. In 2022, accompanied by the overall growth of e-commerce slowed, from the barbaric growth of the past to the two-digit growth, suggesting that the platform should shift appropriately from the fierce competition to fine operations.

Precision marketing of TikTok is first through the selling point of the brand to determine the target group attributes, through its huge user behavior data and basic information data, to generate user images, and to predict the preferences of the user, to find the exact medium corresponding with the target audience properties, so that the media audience

and target group performance is accurately matched, in order to improve the accuracy of brand information dissemination.

With the rise of personalized push and precision marketing, consumers are pushed into the live broadcast by the platform when watching short videos. Although the algorithm is intended to promote user consumption, precision advertising will lead to consumer psychological resistance to a certain extent. Live streaming push mechanisms will play the opposite effect, which not only wastes the marketing costs of merchants, but may also negatively impact the value of the brand.

Accordingly, this article is based on consumer psychology, research recommendations between live broadcasting different influencing factors to the psychological resistance generated by users, to establish the user mental resistance model in the e-commerce live broadcaster environment. And with this model to optimize live streaming push service, improve user satisfaction, improve accurate marketing efficiency, to the platform to bring greater economic benefits.

2 Theoretical Foundations, Models and Research Assumptions

2.1 Theory of Psychological Resistance

In 1966, Professor Brehm proposed the theory of psychological resistance, which is mainly that people tend to believe that they have certain specific acts or choose freedom and cherish that freedom, and when this freedom is deprived or threatened, the individual will produce a state of disgusting motivation aimed at restoring the deprivation or threat freedom. According to the theory of psychological resistance, any force that makes it difficult for an individual to exercise a certain freedom, or even any intention to persuade, can be perceived by the individual as a threat to that freedom. Threats to individual freedom arise not only from the conscious imposition of others or organizations, but even objective events can be perceived as threats by individuals [1]. In addition, the individual's perception of implicit threats also triggers psychological resistance. In general, the greater the degree to which the individual's perceived freedom is threatened, the more intense the psychological resistance that the threat provokes [2]. The development of psychological resistance leads to an enhanced motivation for individuals to restore threatened freedom, thereby increasing the perceptual appeal of those who are prohibited or dissuaded from behavior, while the perceptual appeal for those who have been encouraged or recommended decreases.

2.2 Research Assumptions and Models

According to the theory of psychological resistance, the degree of compulsive sexual feelings, perceptual privacy violations, and perceptual manipulative intentions are the main reasons for the level of active recommendation acceptance. The different factors in the three aspects of recommended timing, recommended degree of conformity, external stress are the reasons for psychological resistance, and the compulsory feelings of users in the purchase process, perceptual privacy violation and perceptual manipulative intent will

be influenced by the three different factors of the recommended time, recommendation degree, and external pressure.

Assumptions Based on Recommended Time Between Live Broadcasts

As information that is over-anticipated and forced to be accepted by consumers, live streaming can interfere with the consumer's browsing of short videos, create compulsive perceptions, hinder consumers' practice of cognitive freedom, force them to interrupt the original process, and spend time and energy to exit uninterested live broadcasts, thereby triggering compulsory perceptions [3]. If the live broadcast is not in line with the purchasing demand generated by consumers after watching short videos, this will bring greater interference to consumers watching short video, and will also make consumers perceive that short video platforms want to stimulate consumption through the push mechanism, so as to make them sense stronger manipulative intentions and perceived privacy violations.

H1a: The more unreasonable the recommendation time between live broadcasts, the stronger the compulsive perception generated by consumers.

H1b: The more unreasonable the recommendation time between live broadcasts, the greater the perception of consumer privacy violations.

H1c: The more unreasonable the push time between live broadcasts, the stronger the perception of the manipulative intent generated by consumers.

Based on Assumptions of Recommended Correspondence Between Live Broadcasts

Compatibility is the degree to which an individual perceives the relationship between two things [4]. Pushing that contains too much of consumer personal information or preferences may make consumers feel that their freedom to handle their personal information is threatened and violated by the platform, thus provoking consumer psychological resistance, leading to consumer resistance or circumvention of the pushing mechanism [5]. When consumers approach products too closely to their preferences to influence their purchasing behavior, they may speculate on the manipulative intent of the platform behind them, and the resulting psychological resistance will lead to the impact of consumer exclusion platforms on their freedom to judge the platform negatively [6]. However, when the information recommended or recommended is contrary to the preferences of the consumer itself, this psychological resistance reduces consumer willingness to accept the recommendation or recommendation and may lead consumers to make the opposite choice [7]. In this study, recommendation correspondence mainly refers to the correlation and correspondence degree between the personalized recommendation goods offered by e-commerce platforms to online consumers and consumers watching short videos, i.e. the degree of personalization of the recommendation system.

H2a: The more consumer-friendly push between live broadcasts, the stronger the compulsive perception generated by consumers.

H2b: The more consumer-friendly push between live broadcasts, the greater the perception of consumer privacy violations.

H2C: The more consumer-friendly push between live broadcasts, the stronger the perception of consumer manipulative intentions.

Assumptions Based on External Pressure Factors

Business users are concerned with information on the condition that the user has sufficient motivation and interest in the information, which can generally be inspired by incentives, especially money. However, a reward or preferential treatment may make consumers aware of the merchant's manipulative intentions, realizing that merchants attempt to influence a series of purchasing behaviors by providing a certain reward, thereby provoking consumers' perception of their freedom being threatened, and creating psychological resistance [6]. For example, excessively enthusiastic marketing, especially in the marketing process of mentioning that they can make a profit from transactions, will make consumers perceive that the broadcaster is trying to influence themselves, thereby causing consumers to contradict the sale [8]. Consumers entering the live broadcasting room also often encounter restrictive conditions set by merchants in the sales process, such as purchasing only on the same day, purchasing three items per person, etc. These external pressures also make consumers feel compulsive. The rewards or preferential treatments offered by the platform in promotions may also cause consumers to perceive manipulative intentions. Excessive economic rewards and conditions that consumers must meet in activities to enjoy promotional offers will make consumers perceive them as a platform for manipulating their own freedom [6].

H3a: The stronger the external pressure between live broadcasts, the greater the compulsive perception generated by consumers.

H3b: The stronger the external pressure, the greater the perception of privacy violations generated by consumers.

H3c: The stronger the external pressure between live broadcasts, the greater the perception of the manipulative intent generated by consumers.

Research Assumptions Based on Psychological Resistance Theory

The psychological resistance theory believes that when an individual perceives that their intentions and behavior to exercise a certain freedom are threatened, a certain degree of psychical resistance is produced, depending on the extent to which the individual is under threat [1]. Even more moderate recommendations or suggestions, if not requested, can create compulsive feelings, jeopardize consumer freedom of decision, and induce psychological resistance [9]. E-commerce platforms have collected large amounts of consumer personal information, regardless of whether the information is authorized or not, the processing of its use will raise widespread concern [10]. The personalized recommendation of e-commerce platforms, while bringing convenience to consumers, will also cause consumers to worry about personal privacy breaches and attempts of the platform to manipulate their shopping behavior, and lead to consumer psychological resistance to the platform. When consumers perceive the manipulative intention of the platform, consumers take various measures to resist the influence of this manipulative intent, which leads to an ineffective marketing strategy [11].

H4a: The stronger the user's perception of compulsive sex between live broadcasts, the stronger its psychological resistance to pushes.

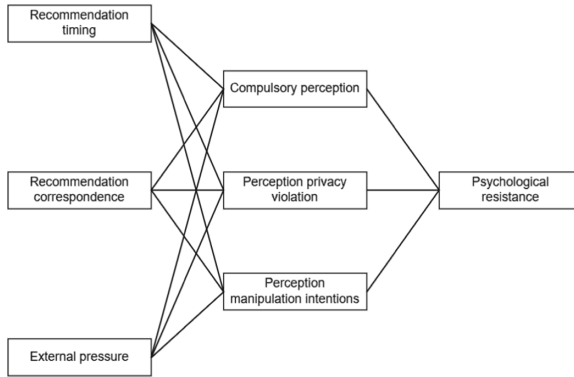


Fig. 1. Theoretical models

H4b: The more users perceive privacy violations during live broadcasts, the stronger their psychological resistance to pushes.

H4c: The stronger the user's intention to manipulate the perception of the push between live broadcasts, the stronger its psychological resistance to the push.

Based on the above assumptions, the conceptual model as shown in Fig. 1 is constructed.

3 Evidence Studies

3.1 Design of Questionnaires

The survey questionnaire consists of 3 parts: the first part is introductory, explaining the purpose of the survey, the professional terms of the questionnaire, the basic situation of the questionnaire; the second part is for the basic information of the respondents, including gender, age, academic qualification, etc., to understand the fundamental situation of those surveyed, the basis for sample statistics; the third part is a variable measurement table. Using the Liqueur's five-level scoring method, the respondents selected the five options "very disagree", "more disagreed", "generally", "comparatively agree" and "very agreed" respectively corresponding to "1 2, 3, 4, 5" points.

3.2 Collection of Data

The study mainly selected users between 31 and 40 years of age who frequently browse short videos, the group accounted for 39.83% of the total sample. Men account for 44.92% of the overall sample number, women account for 55.08% of the general sample, men and women ratio is close to 1:1. In the educated level, 83.05% of people have undergraduate degrees, graduate higher degrees account for 6.78%, the other account for 10.17%. Frequently watched short video platforms account for users trembling to 93.22%, and short videos meet users being pushed into live broadcasts to 94.92%.

3.3 Verification of Reliability and Effectiveness

The study used SPSS 26 to test the reliability of the sample, with results as shown in Table 1. In addition to the recommended time between live broadcasts due to fewer subjects and fewer questionnaires, Cronbach's α is less than 0.7, but the CITC values of each analysis item are greater than 0.4, indicating that there is a good correlation between the analysis items, indicating a good level of credibility. Cronbach's α for each variable is above 0.7, indicating better internal consistency of the model, through credibility testing.

After verification factor analysis found that the factor load in addition to the external pressure between live broadcasts due to more influence factors, so AVE is lower, the degree of polymerization is worse, but other variables are larger than 0.7, AVE values are greater than 0.5 in accordance with the standard requirements, through validity testing.

Table 1. Measurement indicators of measurement variables and star tests

The variable	Project	Factor loading	AVE	CR
Recommendation timing ($\alpha = 0.606$)	Tim1	0.853	0.603	0.727
	Tim2	0.853		
Recommendation correspondence ($\alpha = 0.862$)	Cor1	0.737	0.510	0.862
	Cor2	0.792		
	Cor3	0.789		
	Cor4	0.768		
	Cor5	0.770		
	Cor6	0.758		
External pressure ($\alpha = 0.737$)	Ext1	0.700	0.329	0.663
	Ext2	0.700		
	Ext3	0.705		
	Ext4	0.717		
Compulsory perception ($\alpha = 0.769$)	Com1	0.862	0.54	0.776
	Com2	0.869		
	Com3	0.787		
Perception manipulation intentions ($\alpha = 0.753$)	Man1	0.857	0.518	0.761
	Man2	0.804		
	Man3	0.798		
Perception privacy violation ($\alpha = 0.852$)	Pri1	0.815	0.543	0.855
	Pri2	0.763		
	Pri3	0.821		

(continued)

Table 1. (continued)

The variable	Project	Factor loading	AVE	CR
	Pri4	0.856		
	Pri5	0.725		
Psychological resistance ($\alpha = 0.763$)	Psy1	0.830	0.528	0.769
	Psy2	0.784		
	Psy3	0.828		

3.4 Evidence Analysis

In addition to H3a, H3b, and H3c, the remaining nine assumptions were supported. Compulsive feelings, perceived privacy violations and perceptual privacy violation are significantly positively correlated with psychological resistance, and consumer compulsory feelings and perceptive privacy infringements are affected by the significant negative impact of the recommended live time between broadcasts ($z = -2.335$, $p = 0.020 < 0.05$), ($z = -2.641$, $p = 0.008 < 0.01$). That is to say, the more reasonable the push between live broadcasts, the smaller the compulsive feelings and the lower the perception of privacy infringement. Forced perceptual and perceptual privacy violations are affected by the recommended correspondence rate between live broadcasts ($z = 4.019$, $p = 0.000 < 0.01$), ($z = 2.725$, $p = 0.006 < 0.01$). The stronger the consistency of recommendations between live broadcasts, the more consistent the consumer, the weaker the psychological resistance of consumers, and the greater the will to accept the recommendation. In addition, external pressure between live broadcasts can have a negative impact on compulsive sexual perception and perceptual privacy violations ($z = -3.732$, $p = 0.000 < 0.01$), ($z = -3.702$, $p = 0.000 < 0.01$). Currently popular promotional recommendation behavior such as second killing, time-limited ransom buying, broadcasting power recommendation, is realized by imposing external pressure on consumers (Table 2).

Table 2. Hypothesis testing

Assumption	Estimate	S.E.	C.R.	p	Result
Psychological resistance ← Compulsory perception	0.269	0.082	2.891	0.004	Support
Psychological resistance ← Perception privacy violation	0.433	0.078	4.97	***	Support
Psychological resistance ← Perception manipulation intentions	0.197	0.085	2.08	0.038	Support
Compulsory perception ← Recommendation timing	-0.22	0.124	-2.335	0.02	Support

(continued)

Table 2. (continued)

Assumption	Estimate	S.E.	C.R.	p	Result
Compulsory perception ← Recommendation correspondence	-0.362	0.109	-4.019	***	Support
Compulsory perception ← External pressure	-0.339	0.125	-3.732	***	Support
Perception privacy violation ← Recommendation timing	-0.247	0.12	-2.641	0.008	Support
Perception privacy violation ← Recommendation correspondence	-0.255	0.111	-2.725	0.006	Support
Perception privacy violation ← External pressure	-0.337	0.122	-3.702	***	Support
Perception manipulation intentions ← Recommendation timing	0.003	0.124	0.028	0.978	Not support
Perception manipulation intentions ← Recommendation correspondence	-0.17	0.113	-1.783	0.075	Not support
Perception manipulation intentions ← External pressure	-0.13	0.129	-1.355	0.176	Not support

4 Summary and Suggestions

This article, based on the theory of psychological resistance, analyzes the impact of various factors on the user's mental resistance between live broadcasts and explores the extent and mechanisms of influence of the factors through experiments. Introducing the recommended timing, recommended correspondence and external pressure between live streaming into consumer psychological research in the field of e-commerce, better explains the consumption psychology in specific situations. The results showed that the recommendation time, recommendation correspondence, and pressure of the external space between live Broadcasts generates compulsive perceptions on users, and recommendation times, recommendations match and pressure from external areas generate perceptual privacy violations on users. Therefore, when the platform designs the push mechanism, it should pay attention to the more reasonable timing of the push and the content that is more in line with the needs of consumers, and whether it is promotion or purchase restrictions, it should be reasonable so as not to make consumers feel too psychological resist.

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