

# The Study of the Influence Factors of Douyin Live Streaming on College Students' Purchase Intention Based on TAM Model

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## Abstract

With the rapid development of live streaming e-commerce, this paper selects college students with relatively strong receptivity to new technologies as the research object, combining the characteristics of Douyin live streaming to build an analysis model of factors affecting their Douyin live streaming purchase intention based on TAM Model. 259 questionnaires were randomly sampled as sample data, and a structural equation model was constructed with latent variables such as product quality, product display, product expectation, product preference, and purchase intention. The results indicate that product expectations, product quality, and product display have a more significant impact on purchase intention, showing a positive correlation, with path coefficients of 0.76, 0.61, and 0.67. Therefore, sellers need to change their previous marketing strategy of price wars and pay more attention to improving consumers' shopping and buying experiences. Sellers should enrich products' description and display them in different ways according to the characteristics of the products, rather than simply peddling. Sellers should also ensure the quality of live streaming products and set up a good after-sales service system.

## Keywords

College Students; Douyin live streaming; Influencing Factors; Technology Acceptance Model (TAM).

## 1. Introduction

According to 'The 50th Statistical Report on China's Internet Development' released by CNNIC, the number of short video users has reached 962 million by 2022, accounting for 91.5% of the total Internet users<sup>[1]</sup>. Short videos have become one of the main tools for people to get their information and entertainment. As the largest short video platform in China, Douyin short video platform is different from the operation mode of traditional B2C e-commerce platform such as Taobao, Tmall, and JD.COM. The recommendation mechanism of Douyin e-commerce is based on the matching of users' interest tags and video content tags and stimulate consumer shopping needs through the creation of high-quality content during the content recommendation process. In this process, the platform distributes products to users through short videos or live streaming, arousing their interest and shopping needs, which is a new type of precise recommendation technology. Therefore, Douyin E-commerce has also entered a period of rapid development. The college students group is a group with relatively strong receptivity to new technologies, therefore, choosing college students as the research group is very representative. Due to the short rise of Douyin e-commerce, there is relatively little relevant research both domestically and internationally. At present, the study on Douyin E-commerce is mostly limited to the live streaming. Meng Lu et al. studied the mechanism by which the characteristics of different types of live streaming internet celebrities' information sources affect consumers' purchase intention<sup>[2]</sup>. Li Xue's research focused on consumer satisfaction in live streaming e-commerce. Through factor analysis of the significant impact on consumer satisfaction in live

streaming e-commerce, strategies and suggestions were proposed to further improve the satisfaction of live streaming e-commerce<sup>[3]</sup>. Liu Lingyu et al. studied the influencing factors of consumers' willingness to purchase agricultural products through e-commerce live streaming<sup>[4]</sup>. Chen Pinqi used SOR theory and AISAS model to study the impact of e-commerce live streaming on consumer purchasing decisions<sup>[5]</sup>. Zhang Yan explored the usage behavior and influencing factors of college students towards online shopping live streaming<sup>[6]</sup>. There is relatively little research on the college student group in the field of live streaming.

## 2. Theories and Assumptions

The Technology Acceptance Model (TAM), which proposed by Davis<sup>[7]</sup>, has been used to study the adoption behavior intention of e-commerce platforms<sup>[8]</sup>, the influencing factors of users' continuous use of shopping APP models<sup>[9]</sup>, the user evaluation of social e-commerce platforms<sup>[10]</sup> and other consumer behavior analysis, and has a good ability to explain the influencing factors of consumer behavior. Therefore, this model can be used to explore the willingness of college students to shop through Douyin live streaming.

As a novel shopping form, online live shopping has become increasingly popular among college students due to its excellent shopping and buying experience, which has developed rapidly in recent years. Online live shopping is different from other shopping forms. In addition to factors such as product quality, brand awareness, and product price, factors such as social presence, celebrity participation, and key opinion leader's live streaming also have a great appeal to college students<sup>[5]</sup>. Unlike ordinary consumers, college students have not yet earned money on their own, and their expectations and preferences of products are also important influencing factors. Therefore, this paper explores the influencing factors and formation mechanism of college students' purchase intention of Douyin live streaming, and puts forward suggestions to help sellers to find important means to sell products through live streaming. It is a way to promote the effective development of Douyin live streaming shopping. Based on the extended model of TAM, this study selects product expectations, product preferences, product quality, and product display as independent variables to analyze the impact of college students on their willingness to shop through Douyin live streaming. Therefore, the following assumptions are proposed:

H1: Product preference positively promotes college students' willingness to purchase through Douyin live streaming.

H2: Product expectations positively promotes college students' willingness to purchase through Douyin live streaming.

H3: Product quality positively promotes college students' willingness to purchase through Douyin live streaming.

H4: Product display positively promotes college students' willingness to purchase through Douyin live streaming.

Based on the above assumptions, it is refined into 14 survey questions as observation variables. This study used the Likert 5-level scale to assign values to variables. 1 stands for completely disagree and 5 stands for completely agree, as shown in Table 1.

Table 1 Variable Definition Table

Structural Variable	Observed Variable
Product Preference	I have a liking for Douyin live streaming to buy products(PP1)
	Compared with other purchase channels, I prefer to buy products in Douyin live streaming(PP2)
	I am very interested in purchasing products from Douyin live streaming(PP3)

Product Expectation	Douyin live streaming can improve shopping satisfaction(PE1)
	Douyin live streaming can save time and money by purchasing products(PE2)
	Douyin live streaming can experience the joy that traditional shopping does not have(PE3)
	Douyin live streaming can provide more choices for purchasing products(PE4)
Product Quality	Douyin live streaming can make me feel that the quality of products is more guaranteed(PQ1)
	Douyin live streaming can more intuitively reflect the quality of products(PQ2)
	Douyin live streaming can satisfy my consumer's right to know (PQ3)
Product Display	Douyin live streaming purchase can provide specific and detailed information about products(PD1)
	The products purchased by Douyin live streaming are endorsed by stars and Key Opinion Leaders(PD2)
	The products purchased by Douyin live streaming are creative(PD3)
	Douyin live streaming have various marketing methods(PD4)
Purchase Intention	I am willing to purchase products through Douyin live streaming(PI1)
	I plan to purchase products through Douyin live streaming(PI2)
	I would like to recommend Douyin live streaming to buy the products we need to my surrounding people(PI3)

### 3. Analysis and Results

#### 3.1. Sample Descriptive Statistical Analysis

In order to understand the impact of Douyin live streaming on college students' willingness to shop, this study adopts questionnaire survey to collect relevant data. Considering the convenience of questionnaire collection and data processing, this paper mainly focuses on college students in Wenzhou, Zhejiang Province, and is conducted mainly through online questionnaire survey. This study distributed questionnaire survey in February 2023. A total of 259 valid questionnaires have been received. Through data statistics, males accounted for 50.19% and females accounted for 49.81%. The grade distribution is 39.38% for freshmen, 31.66% for sophomores, 23.55% for juniors, 1.54% for seniors, and 3.86% for graduate students. Monthly living expenses were concentrated in the range of 1000 to 2000 RMB, while the average monthly online shopping expenses were distributed relatively dispersed. 70.66% of the students said they had purchased products through Douyin live streaming.

Table 2 Sample Descriptive Statistical Analysis Results

Variable	Variable Definition	Frequency	Scale
Gender	Male	130	50.19%
	Female	129	49.81%
Grade	Freshman	102	39.38%
	Sophomore	82	31.66%
	Junior	61	23.55%

	Senior	4	1.54%
	Postgraduate	10	3.86%
Monthly living expenses during school(RMB)	0-1000	19	7.34%
	1001-1500	105	40.54%
	1501-2000	87	33.59%
	2001-2500	29	11.20%
	2501-3000	3	1.16%
	>3000	16	6.18%
Average monthly online shopping consumption expenditure (RMB)	0-100	42	16.22%
	101-200	53	20.46%
	201-300	52	20.08%
	301-400	40	15.44%
	401-500	23	8.88%
	>500	49	18.92%
Have you ever purchased products through Douyin live streaming	Yes	183	70.66%
	No	76	29.34%

### 3.2. Reliability and Validity Testing

After conducting reliability analysis on the questionnaire data, it was found that the reliability of the variables was above 0.8, and the Cronbach's Alpha value of the scale was 0.946, indicating good internal consistency among the variables in the survey scale. The KMO value is shown to be 0.945 and significantly correlated at the 5% level, indicating good structural validity of the data indicators

Table 3 Cronbach's Alpha value of the scale

Structural Variable	Cronbach's Alpha	Items	Cronbach's Alpha
Product Preference	0.896	3	0.946
Product Expectations	0.911	4	
Product Quality	0.892	3	
Product Display	0.886	4	

### 3.3. Model Path Analysis and Result Analysis

This paper evaluates the structural equation model using AMOS24.0, and the results are shown in Figure 1. The structural equation model reflects the relationship between various latent variables. The results indicate that the path coefficients of product preference, product expectations, product quality, and product display on purchase intention all pass the significance test. The standardized path coefficients of product preference, product expectation, product quality, and product display on purchase intention are 0.41, 0.76, 0.61, and 0.67. The impact of product expectations, product quality, and product display on purchase intention is more significant. Further analysis of these three potential variables can lead to the following conclusions:

#### 3.3.1. Product expectations have the greatest impact on college students' purchase intention

Among the four measurable indicators reflecting product expectations, the variables of product expectation characteristics from large to small are "Douyin live streaming can improve shopping satisfaction", "Douyin live streaming can save time and money by purchasing products", "Douyin live streaming can provide more choices for purchasing products" and "Douyin live streaming can save time and money by purchasing products". The standardized coefficients for

these indicators are 0.9, 0.85, 0.83, and 0.82. In the process of Douyin live streaming shopping, college students believe that the importance of Douyin live streaming shopping can improve shopping satisfaction and experience shopping and buying fun is greater than the importance of shopping can save time and get preferential prices, which shows that contemporary college students pay more attention to shopping and buying experience.

### 3.3.2. The impact of product display on purchase intention comes second

Among the four observed variables, the path coefficient of 'Douyin live streaming purchase can provide specific and detailed information about products' and 'The products purchased by Douyin live streaming are creative' are higher than the other two observed variables. Compared with traditional e-commerce, the way of product display and shopping and buying experience brought by live video and live streaming are more variable and visual, which also promotes college students' willingness to shop through Douyin live streaming.

### 3.3.3. Product quality is also a significant factor in the purchase intention of Douyin live streaming.

Through short video display of products, college students can intuitively understand the quality of products, and thus feel that product quality is more guaranteed and satisfies their consumer's right to know about the products.

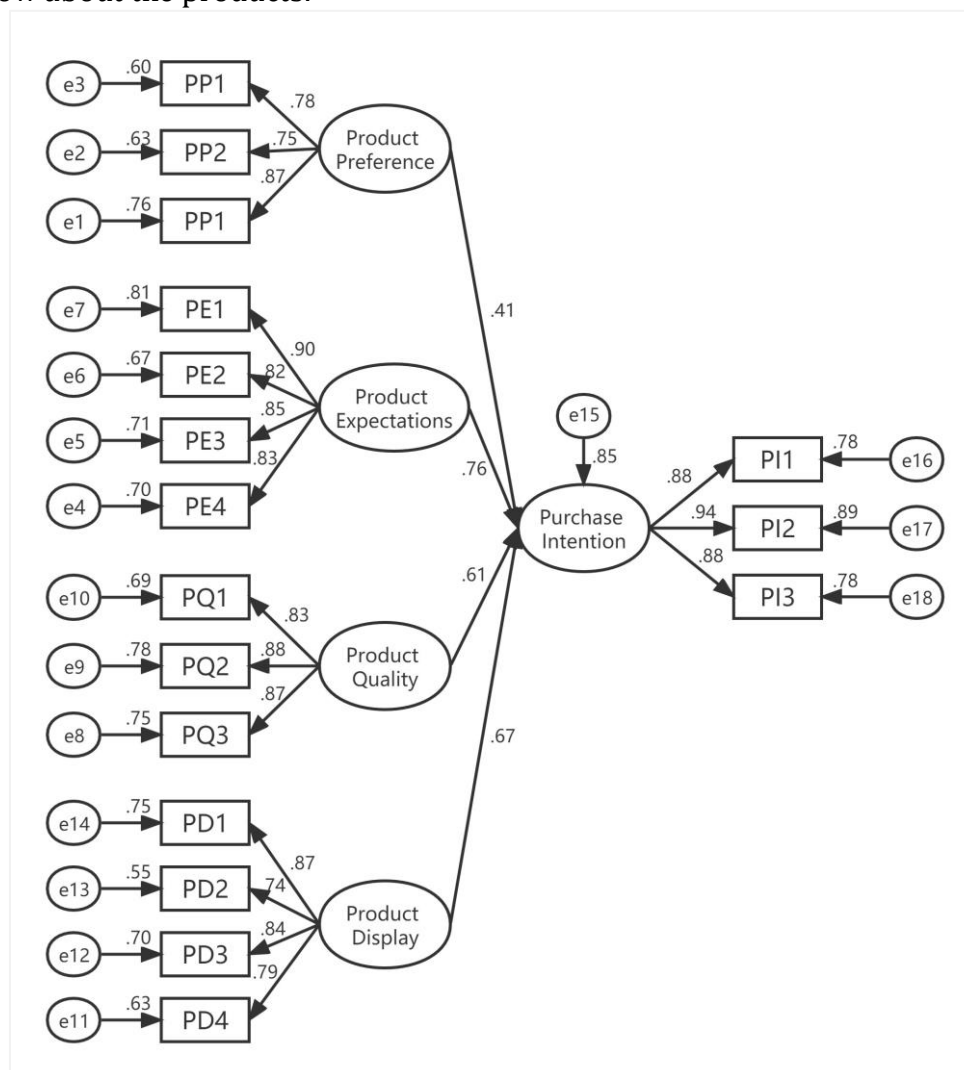


Fig 1 Structural model of influencing factors of Douyin live streaming on college students' shopping willingness



## 4. Conclusions and Recommendations

### 4.1. Research Conclusion

This paper takes the survey data of college students as samples, and establishes a research model of college students' purchase intention of shopping through Douyin live streaming based on the technical reception model. By constructing a structural equation model with latent variables of product quality, product display, product expectations, product preferences, and purchase intention. The empirical model is used to analyze the influencing factors which affect college students' purchase intention of shopping through Douyin live streaming, and provide marketing suggestions for improving the operation level of Douyin live streaming and promoting the development of Douyin live streaming and Douyin e-commerce. From the survey, it is found that product expectations, product quality, and product display have a more significant impact on college students' purchase intention of shopping through Douyin live streaming.

Compared to the time and money saved by live streaming shopping, college students pay more attention to the shopping and buying experience. The new way of product display and a stronger sense of experience brought by live video and live streaming are also important factors that attract college students to buy products through live streaming. Through live streaming, sellers can more intuitively display product quality, which is also one of the main factors that significantly affect the purchase intention of Douyin live streaming.

### 4.2. Policy Suggestion

#### 4.2.1. The main advantage of live streaming compared to traditional e-commerce is that it provides consumers with a better shopping experience

The research results also show that the importance of Douyin live streaming purchase of products to improve shopping satisfaction and experience shopping fun is more than the importance of saving time and obtaining preferential prices. Therefore, sellers need to change their previous marketing strategy of price wars in e-commerce and pay more attention to improving consumers' shopping and buying experience, thereby promoting sales growth. In live streaming chat room, in order to enhance the viewers' experience, it is necessary to allow viewers to interact with the hosts. For example, hosts can try out products on the spot in the live streaming, share user experiences and show the effects, and gain viewers' trust.

#### 4.2.2. A detailed explanation of the product and creative display methods can better arouse consumers' willingness to purchase

Sellers need to provide more specific product information description of their products and display them in different ways based on their characteristics, rather than simply introducing to attract consumers to purchase on their live streaming chat rooms. Hosts should have a deep understanding of the products they select, explain the specific information of the products to viewers, provide true feedback of the products after trial use. The higher the hosts' professional ability, the easier it is to sell more products.

#### 4.2.3. Quality is the lifeline of a product, and good quality is the foundation for attracting consumers to make continuous purchases

Sellers should ensure the quality products which sold on live streaming chat rooms, establish a good after-sales service system, and thus creating a good image of their online shops and establishing word-of-mouth user evaluation system. At the same time, it is necessary to strengthen the brand's online word-of-mouth dissemination. Live streaming platform should enhance the supervision of the sellers and their products, improve the reputation of the platform and form a win-win situation for the platform, sellers, and consumers.

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## References

- [1] The 50th Statistical Report on the Development of China's Internet: <https://www.cnnic.net.cn/n4/2022/0914/c88-10226.html>.
- [2] L.Meng,F.J.Liu,et al:Can I Evoke You? A Study on the Influence Mechanism of Information Source Characteristics of Different Types of Live streaminging Celebrity on Consumers' Willingness to Purchase,Nankai Business Review,vol.23(2023)No.1,p.131-143.
- [3] X.Li,Y.Zong,et al:Social Responsibility of Short Video Platform Enterprises: Components and Basic Features,Jiangsu Commercial Forum,(2020)No.6,p.31-35.
- [4] L.Y.Liu,L.J.J.Huang:Study on Influencing Factors of Consumers' Purchase Intention of E-commerce Live streaming Agricultural Products-Analysis Based on Technology Acceptance Model,South China Rural Area,(2021)No.1,p.21-27.
- [5] P.Q.Chen,B.Yin:Research on the Influence of E-commerce Live streaming on Consumers' Purchase Decision-Take Douyin live streaming streaming as an Example,Jiangsu Commercial Forum, (2022) No.3,p.29-32.
- [6] Y.Zhang,S.J.Niu,et al:A Study on the Purchase Behavior of College Students in Online Live Streaming Based on TAM,Business & Economy,(2022)No.10,p.70-72.
- [7] Viswanath Venkatesh, Michael G. Morris, Gordon B. Davis, et al: User Acceptance of Information Technology: Toward a Unified View,MIS Quarterly, vol.27(2003)No.3,p.425-478.
- [8] T.L.Wang,G.S.Zhang:E-commerce platform adoption behavior and influencing factors based on technology acceptance model,Enterprise Economy,(2020)No.3,p.132-137.
- [9] P.Zhou,S.Y.Fu:Empirical Study on the Factors Influencing the Users Continuous Use of Shopping APP,Journal of Nanjing Normal University(Natural Science Edition),vol.43(2020)No.2,p.140-148.
- [10] Y.Q.Tian,Y.L.Qin:A Study on User Engagement Evaluation of Social E-commerce Platform Based on TAM Model-A Case Study of Xiaohongshu App,Logistics Sci-Tech,(2022)No.3,p.34-36.