# The Empirical Relationship between the Consumers' Purchase Decision and the Factors of the Influencers on the Chinese Social Platforms

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**Abstract:** This research how the Chinese customers are affected by the influencers when making purchase decision on the Chinese social media platform. The sample of this research is based on 303 customers who had experience in purchasing products on the Chinese social platforms such as TikTok, Kuaishou, Weibo, Xiaohongshu and Taobao. Questionnaires were launched on the Chinese social media platform. Logistic regression was conducted to analyze the customers' demographic factors, factors related to the social media platforms and the attributes of the influencers on the Chinese social media platforms. The empirical evidence revealed that the purchase decision is positively significantly affected by expertise and popularity of the influencers on the Chinese social media. The purchasing decisions made by customers among genders, income, different platform, use time spending on social media are significantly different.

## 1. Introduction

In the past few years, the popularity of social media influencers has grown exponentially, making influencer marketing very popular in corporate strategy. Influencer endorsement is one of the most popular and effective advertising strategies today. Celebrities are thought to be attractive prospects due to having both endearing qualities and influence. This study aims to analyze the influence of celebrity attributes (attractiveness, expertise, credibility, popularity, and experience with products) on the purchasing decisions of people living in China who make purchase on the Chinese social media platforms.

## 2. The Logistic Model of the Purchase Decision and the Factors

Globally, the application of social media has become increasingly popular in recent years. As there is so much information available from so many sources as we move into the mobile era of Web 3.0, this has led to people's time and attention becoming fragmented. Social media applications not only provide us with entertainment. They also provide us with the latest news and hot topics of discussion (Naaman, Becker, & Gravano, 2011). Consumers are turning to various types of social media more frequently for information because they consider social media to be a more trustworthy source of information than corporate-sponsored dissemination through traditional promotional campaigns (Mangold & Faulds, 2009; Vollmer & Precourt, 2008). Additionally, social media provides extraordinary opportunities for marketers to reach consumers in social communities, building more personal relationships with them (Kelly, Kerr, & Drennan, 2010). Social media has transformed the way that brand content is created, distributed, and consumed, shifting the power to shape the brand image from marketers to the consumers' online connections and content (Tsai & Men, 2013). Social media interactions are fundamentally changing the way that brands communicate with their customers (Kaplan and Haenlein, 2010).

### 2.1. The Proposed Logistic Model

This article used various influencing factors as independent variables in the binary logistic

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regression model as part of an exploratory analysis. According to the current state of purchase intention, an empirical analysis was carried out in combination with various factors. A logistic regression model for purchase intention and the purchase influencing factors was established:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_i X_i + \varepsilon,$$

…… Equation 1

$$where\ X_i\ is\ the\ factors\ to\ be\ tested, and\ \beta_i\ are\ the\ asociated\ coefficients\ and\ \varepsilon\ is\ the\ error.$$

More specifically, the following equation was modelled.

$$\begin{aligned}\ln\left(\frac{p}{1-p}\right) = {} & \beta_0 + \beta_{gender}X_{gender} + \beta_{age}X_{age} + \beta_{occupation}X_{occupation} + \beta_{income}X_{income} \\ & + \beta_{education}X_{education} + \beta_{platform}X_{platform} + \beta_{usetime}X_{usetime} \\ & + \beta_{credibility}X_{credibility} + \beta_{expertise}X_{expertise} + \beta_{attractiveness}X_{attractiveness} \\ & + \beta_{popularity}X_{popularity} + \varepsilon,\end{aligned}$$

…… Equation 2

In the formula, p is the probability of no purchase and 1-p is the probability of purchase on the social platform. More specifically, $\beta_0$ is the constant in the equation. The other notations are explained as above. The factors to be tested in the binary logistic regression are gender, age, occupation, income level, education level, the social platform that the followers use, the popularity of the influencers, the credibility of the influencers, the interactions between the influencers and followers, and finally, the followers' interests in the content.

### 2.2. Results of Spearman's Correlation and Multicollinearity

Spearman's correlation between the above-mentioned factors and the purchase decision were calculated and tested. Additionally, multicollinearity tests were also conducted among all of the independent variables.

Table 1 Spearman's correlation coefficient matrix table across credibility, expertise, attractiveness and popularity.

| Spearman's Rho | Purchase | Credibility | Expertise | Attractiveness | Popularity |
|---|---|---|---|---|---|
| Credibility | 0.206*** | / | 0.573*** | 0.462*** | 0.120** |
| Expertise | 0.192*** | 0.573*** | / | 0.511*** | 0.181*** |
| Attractiveness | 0.234*** | .462*** | .511*** | / | 0.030 |
| Popularity | 0.112* | 0.120** | 0.181*** | 0.030 | / |

Note: *** represents the correlation coefficients are significant at the 0.01 level (2-tailed); ** represents the correlation coefficients are significant at the 0.05 level (2-tailed); * represents the correlation coefficients are significant at the 0.1 level (2-tailed).

Firstly, the Spearman's correlations were calculated across all the independent factors and dependent variable – purchase decision (0: No and 1: Yes). The results are presented in Table 1. According to Table 1, the coefficients of the spearman's correlations between Purchase Decision (0: No, 1: Yes) and all four factors of credibility, expertise, attractiveness, and popularity are all significantly. Therefore, all four factors of the influencers – credibility, expertise, attractiveness, and popularity of the influencers are weakly positively correlated with the purchase decisions of the customers.

As the dependent variable (purchase decision) and the independent variables (credibility, expertise, attractiveness, and popularity) are significantly correlated, the potential binary logistic equation is

possible to regressed. Nevertheless, all the coefficients of the spearman's correlations among the four independent variables are all significant except for the one between attractiveness and popularity. Further tests for multicollinearity among the independent variables must be conducted to meet the assumption of multicollinearity. According to Midi et al. (2010), the inspection of the correlation matrix is not enough. Tolerance, VIF should be examined if potential correlation between the explanatory variables.

Due to reasons mentioned in the last paragraph, the tolerance and variance inflation factors (VIF) among the four explanatory variables: credibility, expertise, attractiveness, and popularity have been examined to check the multicollinearity assumption for the logistic regression. The results are presented in Table 8 Matrix table of tolerance and VIF across Credibility, Expertise, Attractiveness, Popularity. As we can see from Table 7, all coefficients of tolerance are above 0.4. And all VIFs are below 2.5, which is considered as a more conservative level for multicollinearity.

Table 2 Matrix table of tolerance and VIF across credibility, expertise, attractiveness, popularity.

| | Credibility | | Expertise | | Attractiveness | | Popularity | |
|---|---|---|---|---|---|---|---|---|
| | T | VIF | T | VIF | T | VIF | T | VIF |
| Credibility | / | / | 0.613 | 1.630 | 0.630 | 1.587 | 0.966 | 1.035 |
| Expertise | 0.722 | 1.374 | / | / | 0.728 | 1.374 | 0.990 | 1.010 |
| Attractiveness | 0.634 | 1.578 | 0.622 | 1.607 | / | / | 0.972 | 1.028 |
| Popularity | 0.596 | 1.679 | 0.519 | 1.928 | 0.596 | 1.678 | / | / |

### 2.3. The Binary Logistic Regression Model between the Factors of Influencers and the Purchase Decision Making

The binary logistic regression model as presented in Equation 2 was fitted using both the enter method and the forward stepwise method (Likelihood ratio). The fitted equation with significant coefficients is presented in Model 1.

$$\ln\left(\frac{p}{1-p}\right) = -2.401^{***} \times X_{male} - 1.850^{**} \times X_{Income1} - 2.291^{***} \times X_{Income2} + 2.471^{**} \times X_{Platform2} - 1.844^{***} \times X_{Usetime1} + 0.581^{**} \times X_{Expertise} + 0.684^{**} \times X_{Popularity}$$

Model 1 Binary logistic regression of purchasing decision on Chinese social media platform.

Overall, both regression equations using both methods respond well. For the enter method, the model's overall prediction percentage is 78.9%. In detail, this means that the binary logistic model can predict 91.0% of the results related to the purchase made. For no purchase, the percentage was reduced to only 51.6%. Similarly, when the forward stepwise likelihood ratio method was used, the highest overall prediction percentage was 78.2% when gender, income, popularity, and credibility were included in the equation. Additionally, the highest prediction percentage for the purchase category results was 91.9% in step 2 and step 4 when gender and expertise were included in step 2. Gender, income and use time were then included in the equation.

The coefficients indicate the relationship between the explanatory variables and the response variable, where the response variable (purchase decision) is on the logit scale. The coefficients in Model 1 show the amount of increase (or decrease if the sign of the coefficient is negative) in the predicted log odds of the purchase decision. Yes, will be predicted by a one-unit increase (or decrease) in the explanatory variables, holding all other explanatory variables as constant. For the explanatory variables of gender, age, income, and the time spent on the applications, expertise and popularity are significantly related to the purchase decision.

According to Model 1, the odds of males making a purchase are much lower than the same for females (0.091 times more likely that a female will make a purchase). The odds for the lowest income group (less than 2000 RMB per month) and the second lowest income group (2000-3000 RMP per month) when making a purchase are much less than that the highest income group (0.157 and 0.101 times that of the highest income group). As for the platform, it was found that all other platforms have

no significant differences compared to the Little Red Book (reference group), except for Kuaishou. It was found that the odds of making a purchase on Kuaishou is 11.830 times higher than Xiaohongshu. The research failed to find a significant difference among the odds of the purchase decision-making across all other social platforms. For the explanatory factor of the time spent on the apps, it was found that the odds of making a purchase for the group who spent less than 1 hour per day on social platforms are significantly 0.152 times higher than those who spend more than 3 hours per day on social platforms. This revealed the customer stickiness between the social platforms and the purchase making. Regarding the credibility, expertise, attractiveness, and popularity of the influencers, it was found that expertise and popularity are significantly positively related to the purchase-making decision.

## 3. Conclusion

The binary logistic regression revealed insights into the purchase-making decisions of Chinese users on the social platforms in the Chinese market when under the effects imposed by the influencers. The author found that there to be significant differences in the decision-making regarding the different genders, income, platforms used, and time spend on the social media apps. Males, people with a low income (less than 3000 RMB per month), and users who spend less than 1 hour per day on social platforms are much less likely to make a purchase on social platforms compared to their counterparts. However, there is no significant difference in the decision-making among people of different ages, occupations, and education levels.

Furthermore, after using the binary logistic regression, it was found that only expertise and the popularity of the influencers have a significant impact on the Chinese consumers' purchase decision in relation to the Chinese social platforms. The results of the logistic regression revealed that the odds of the customers on Kuaishou making a purchase is 11.83 times higher than the odds of them making a purchase on Taobao. The latter for a long time has been the most popular e-commercial platform in China.

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