

Research on Factors Affecting the Use of E-commerce Consumer Credit Services: A Study of Ant Check Later

Full Paper

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Abstract

This study uses “Ant Check Later”, the e-commerce consumer credit service of Alibaba, as the artifact and explores factors affecting its use. This study first summarized initiatives that Alibaba has launched to stimulate the use of “Ant Check Later”. Three factors, bonus, quota lifting, and scenario enrichment, were then distinguished from the initiatives using principal component analysis. These factors were anticipated to affect consumers’ intention to use the service. The research model was tested using 373 respondents collected from an online survey. Results indicate that bonus, quota lifting, and scenario enrichment are three predictors of consumers’ intention to continue using the service, and bonus and scenario enrichment positively affect non-users’ intention to use the service. This study found that scenario enrichment is the most important factor among the three factors in boosting consumers’ behavioral intention toward using the service.

Keywords

E-commerce consumer credit services, bonus, quota lifting, scenario enrichment, acceptance.

Introduction

In the past three decades, exportation serves as the main driving force that stimulates the fast development of Chinese economy (Ding, 2015). However, the world economy grows slower especially after the subprime mortgage crisis. This compels Chinese government to make a transition from exportation-oriented economy to one that also relies on enlargement of internal demands. Consumer credit service, a type of financial service that allows an individual to purchase goods or services in the absence of immediate payment, becomes an important financial tool that can be used to enlarge internal demands and thereafter contribute to China’s future economic growth (Ding, 2015). The prosperity of consumer credit is also good for consumers and corporates. Consumer credit allows users to purchase products using income in the future, and thus consumers do not need to wait until they have saved enough money. This not only improves consumers’ living quality but also helps overcome the negative effect of overproduction and thereafter increases corporate profits (Watkins, 2000). Thus, the popularity of consumer credit is a win-win situation for consumers, corporates, and the society.

However, it is not easy to encourage Chinese to use consumer credit services because there is a saving habit among Chinese. Meanwhile, Chinese government does not have a credible individual credit rating system until recent years. These factors have impeded the development of consumer credit services in

China. Thus, consumer credit services are less developed in China compared with developed countries (Ding, 2015). It is comforting, though, that Chinese consumers have developed the habit of using credit cards to make purchases after several years of efforts by financial institutions in China. In 2016, Chinese consumer credit reaches to approximately 3.2 trillion and accounts for 46.8 percent of total consumption in China (iResearch, 2017). Accompanied by this trend, e-commerce in China has experienced a rapid development. However, as the slower growth of Chinese economy, e-commerce faces a bottleneck to make a further development. Many e-commerce companies initiated their own consumer credit services in hope of exploring the full potential of consumer consumption. These services are named e-commerce consumer credit services hereafter. However, credit cards are the main source of consumer credit (Ding, 2015), and vehicle and house credit services consist of a major part of consumer credit in China (iResearch, 2017). E-commerce consumer credit services are still in their early stage, and their market share and consumer acceptance are still low. It will be challenging for e-commerce companies to popularize their consumer credit services.

Ant Check Later is a type of e-commerce consumer credit service launched by Alibaba, the largest e-commerce company in China, to promote the sales of goods in e-commerce environment. After opening an Ant Check Later account, an individual can obtain a credit limit between ¥500 and ¥50000 (approximate \$73 to \$7266). Then, he or she can make purchases on e-commerce platforms using credit limit and pay bills later. This study uses the Ant Check Later as the artifact for two reasons: first, Ant Check Later is the most popular consumer credit service provided by e-commerce companies in China, and it can be used on both Alibaba's e-commerce platforms such as TMALL.com and Taobao.com and many other famous Chinese e-commerce platforms such as Amazon.cn and Dianping.com. However, only 9.52 percent of purchases in Alibaba e-commerce platforms are paid using the "Ant Check Later" (iResearch, 2017); and second, Alibaba company has launched its own individual credit rating system, which is an important factor that stimulates the development of consumer credit services. Thus, it is promising to explore factors affecting consumers' use of e-commerce consumer credit services such as "Ant Check Later".

This study explores factors affecting the use of e-commerce consumer credit service in China, taking Ant Check Later as the focal service. We first make a summary of activities that Alibaba used to stimulate the use of its consumer credit service, and then explore whether those activities can be categorized into different factors and whether they are effective in promoting the use of e-commerce consumer credit service. The rest of the paper is organized as follows. Hypotheses are developed first based on a literature review. Then, the variables used in this study are described, and the methodology part is also explained. Finally, the results and both academic and practical implications of the findings are discussed.

Hypotheses Development

Chen et al. (1998) found that coupon promotions were evaluated favorably and effective in changing subjects' purchase intentions. Bonus and coupons are useful mechanisms for carrying out different marketing management functions such as sales promotion, brand promotion, and inventory management (Jayasingh and Eze, 2015). When it comes to e-commerce consumer credit services, consumers can obtain monetary or non-monetary rewards if they pay using the credit services. These extrinsic rewards serve as stimuli for consumers to use e-commerce consumer credit services. Thus, we anticipate that:

Hypothesis 1a: Bonus has a positive relationship with users' intention to continue using e-commerce consumer credit services.

Hypothesis 1b: Bonus has a positive relationship with non-users' intention to use e-commerce consumer credit services.

Friedman (1957) pointed out that consumers do not make purchase decisions based on present income level but on expected income level. Consumers will adjust their consumption based on their expectation of future income. Consumers will expect a higher level of future income if financial institutions improve their credit limits. Then, they are more likely to make purchases using credit services if their credit limits are improved. Past literature also supports the positive relationship between credit limit and credit consumption. For example, Gross (2000) finds that an increase in credit limits generates an immediate and significant rise in credit consumption. Soman (2002) examines the relationship between credit quota

and consumer decisions and finds that upgrading credit limits of a credit card will increase consumers' credit purchases. Thus, we anticipate that:

Hypothesis 2: Quota lifting activities have a positive relationship with users' intention to continue using e-commerce consumer credit services.

Scenario enrichment refers to the comprehensiveness of situations where consumers can use e-commerce consumer credit services to make payments. The more scenarios consumers can use the credit services to make payments, the more frequently they are exposed to the credit services. This exposure to the credit services will increase consumers' familiarity with the services and increase their trust in the services (Moorthy and Hawkins, 2005), facilitating consumers to use the services. In addition, scenario enrichment can be perceived as context-aware marketing. For example, advertising information is usually displayed in scenarios where the service can be used. Context-aware marketing is effective in attracting consumers to use a certain product or service (Deighton and Kornfeld, 2009). Thus, we anticipate that rich scenario will entice consumers to use the credit services (Paul, 1991).

Hypothesis 3a: Scenario enrichment has a positive relationship with users' intention to continue using e-commerce consumer credit services.

Hypothesis 3b: Scenario enrichment has positive relationship with non-users' intention to use e-commerce consumer credit services.

Control Variables

Young consumers are more likely to accept new technology and service. Also, female and male consumers have different purchase habits and thus different needs of consumer credit, which may affect the use of e-commerce consumer credit services. In addition, students have no salary or low internship salaries, which may strengthen their intention to use e-commerce consumer credit services. Thus, we include age, gender, student or not, and income as control variables.

Activities Potentially Affecting Intention to Use or Continued Use

Alibaba has launched many activities to encourage current users of "Ant Check Later" to continue using the service and entice non-users to use the service. To gather the independent variables that will affect consumers' intention to use (or continue using) e-commerce consumer credit service, we pry into the social interactive gateways between the firm and consumers to find out activities or initiatives that it has launched to attract users. Weibo, WeChat and official website of Ant Check Later are taken into consideration. The activities are summarized in Table 1.

Variables	Description
Lucky draw	Users can participate in lucky draw if they pay using Ant Check Later, and they can get small gifts such as paying only one penny to watch a movie.
Free of charge	Users of Ant Check Later can win the chance to shop on TMall.com for free in the next year.
Discount coupon	Users can apply a discount coupon to spend less when they pay using Ant Check Later.
High payment success rate	Pay using Ant Check Later improves the payment success rate. For example, during the payment peak period in the 11.11-shopping day, pay using Ant Check Later has a success rate of 99.99%.
Fast payment speed	Pay using Ant Check Later fastens the payment process. For example, pay using Ant Check Later is the fastest payment approach in the 11.11-shopping day.
Interest-free consumption loan	A type of promotion activity that allow users to pay using Ant Check Later without paying interest.
Queen's quota	Female users can ask male friends to help them improve credit limits without

activity	affecting the credit limits of their male friends.
Lift quota by showing good appearance	Users can allow the Ant Check Later application to scan their faces, and then the application will offer additional credits based on how beautiful or handsome the users are.
Lift quota by adding contacts with good credit score	An activity that users can increase their quotas by adding friends whose Ant Check Later credit scores are high.
Double eleven privileged	Ant Check Later temporarily lifts the quotas of all their users in the 11.11-shopping day.
Cooperation with Hospitals	Ant Check Later cooperates with hospitals, in which patients can get treated first and pay bills online later.
Cooperation with Fliggy [†]	Ant Check Later cooperates with Fliggy, and then Ant Check Later users can travel first and pay bills online later.
Support overseas shopping	Ant Check Later can be used in about 80 thousand overseas stores of 20 countries.
Cooperation with physical stores	Ant Check Later cooperates with physical stores, in which users can purchase items first and pay bills online later.

Note: [†] fliggy is the online travel agency platform of Alibaba.

Table 1. Independent Variables

Data Collection

Data was collected using an online survey distributed with help of the Sojump platform, the largest online survey platform in China. 373 valid questionnaires were collected. Among the 373 respondents, there are 190 users of “Ant Check Later”, accounting for 50.94% of the total number of respondents. There are 183 respondents who have not used “Ant Check Later”. Table 2 summarizes the demographic information of the respondents. According to the report of iResearch (2016, 2017), the proportion of young users of “Ant Check Later” increases fast, and the generation after 90s (those who aged 18 to 27) and the generation after 80s (those who aged 28 to 37) are the major sources of consumption in e-commerce and the main part of credit service users. Our respondents centered between 18-35, and thus are proper respondents for this study.

	Category	Percentage (%)
Age	<18	2.14
	18-22	71.85
	23-35	11.26
	36-50	11.8
	>50	2.95
Gender	Male	45.31
	Female	54.69
Student or not	Yes	74.26
	No	25.74
Income	<2000	63.27

	2000-5000	26.81
	5000-10000	4.83
	10000-20000	2.95
	>20000	2.14

Table 2. Demographic Information

One item was used to measure the attraction of each activity as listed in Table 1. For example, “the lucky draw activity is attractive.” This study covers both non-users and current users of e-commerce consumer credit service and explores factors affecting their intention to use (or continue using) the service. Thus, the dependent variable is intention to use for the non-user group and intention to continue using for the user group. Three items adapted from Gu et al. (2009) were used to measure non-users’ intention to use the e-commerce consumer credit service, and three items adapted from Venkatesh et al. (2012) were used to measure current users’ intention to continue using the service. All items are reflective items measured with seven-point Likert scale from 1 strongly disagree to 7 strongly agree.

Empirical Model and Analysis

We performed KMO test and Bartlett's Test of Sphericity for user and non-user groups respectively. For the user group, the value of KMO statistics is 0.895, and the p-value of Bartlett's Test of Sphericity test is less than 0.001. For the non-user group, the value of KMO statistics is 0.874, and the p-value of Bartlett's Test of Sphericity test is less than 0.001. These results indicate that correlations between the variables are relatively strong and fit for factor analysis. We adopted a principal component approach to determine how groups of correlated variables can be combined into uncorrelated factors (Neter et al., 1990). The results are summarized in Table 3.

Independent variables	Factors for Users			Factors for Non-Users	
	1	2	3	4	5
Lucky draw	.730	.231	.105	.561	.504
Free of charge	.713	.047	.130	.626	.422
Discount coupon	.686	.103	.204	.866	-.037
High payment success rate	.594	.474	.282	.675	.464
Fast payment speed	.586	.382	.395	.641	.530
Interest-free consumption loan	.522	.459	.133	.688	.337
Queen's quota activity*	.178	.780	.098	---	---
Lift quota by showing good appearance*	.005	.744	.204	---	---
Lift quota by adding contacts with good credit score*	.347	.665	.240	---	---
Double eleven privileged*	.337	.616	.296	---	---

Cooperation with Hospitals	.097	.097	.870	.146	.777
Cooperation with Fliggy	.115	.327	.785	.201	.844
Support overseas shopping	.365	.209	.729	.460	.585
Cooperation with physical stores	.420	.249	.612	.320	.788

Note: Extraction with Principal Component Analysis; rotation with Varimax;
 *activities just for current users.

Table 3. Principal Component Analysis

For the user group, three factors are distinguished and explain 62.4% of the information included by all the original variables. Six items loaded on Factor 1, four items loaded on Factor 2, and four other items loaded on Factor 3. For the non-user group, two factors are distinguished and explain 64.9% of the information included by all the original variables. Six items loaded on Factor 4, and four items loaded on Factor 5. Table 3 shows the loadings of each factor in boldface. We found that Factor 1 has same items with factor 4 while factor 3 has same items with factor 5. Factor 2 has items that are just for users because quota-lifting activities target at current users but not non-users.

It is shown that as to factor 1 (or factor 4), which includes lucky draw, free offer, coupon, high payment success rate, the fastest payment speed, and interest-free for installment. These items are “**bonus**” that consumers can enjoy if they use or continue using the credit service.

As to factor 2, items include queen’s quota activity, lifting quota by showing good appearance, lifting quota by adding contacts with good credit and special quota for Singles’ Day. These items are about “**quota lifting**” activities that e-commerce credit service providers can offer consumers to increase their credit limits.

Factor 3 (or factor 5) includes cooperation with hospitals, cooperation with Fliggy, supporting overseas shopping, and cooperation with physical stores. These items are about “**scenario enrichment**” that reflects the comprehensiveness of scenarios that consumers can use the e-commerce consumer credit service.

In summary, three independent variables, bonus, quota lifting, and scenario enrichment, are distinguished for user group while two independent variables, bonus and scenario enrichment, are distinguished for non-user group.

The model for users and non-users can be described as below:

$$\text{Intention (users)} = f(\text{age, sex, student, income; bonus, quota lifting, scenario enrichment}) + \varepsilon$$

$$\text{Intention (non-users)} = f(\text{age, sex, student, income; bonus, scenario enrichment}) + \varepsilon$$

Results

To test our hypotheses, we first created scores for each factor by using the averages of the items for each corresponding factor. To ensure that multicollinearity does not pose a potential threat to our regression results, we first examined the variance inflation factors (VIFs) for all independent variables. We detected no severe multicollinearity issue since all VIFs were lower than 5 (Belsley et al., 2004). We utilized the hierarchical linear regression model to test our hypotheses, and the results were summarized in Table 4.

For both the user and non-user groups, we used the two-stage regression process. In the first model, we examined the independent effects of the control variables (age, sex, salary, and student or not) without including any of the bonus, quota lifting, and scenario enrichment variables. This model is named model 1 for the user group and model 3 for the non-user group. None of the control variables is significant, and model 1 only explains 3.5 percent of the variance of users’ intention to continue using the credit service. Meanwhile, model 3 only explains 11.9 percent of the variance of non-users’ intention to use the service.

	User Group		Non-User Group	
	Model 1	Model 2	Model 3	Model 4
<i>Intercept</i>	5.044***	1.632**	3.522***	1.655
<i>Controls</i>				
Age	0.009	-0.003	0.153	0.012
Sex	-0.026	-0.098	-0.219	-0.370**
Salary	0.000	0.000	0.152	0.006
Student	-0.486	-0.413	-0.461	-0.391
<i>Independent Variables</i>				
H1a, b: Bonus		0.156*		0.257***
H2: Quota lifting		0.326***		---
H3a, b: Scenario enrichment		0.352***		0.402***
R ²	0.035	0.542	0.119	0.532
Adjusted R ²	0.015	0.525	0.099	0.516
Sig. F Change	0.151	0.000	0.000	0.000

Note: * for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$; unstandardized coefficients reported.

Table 4. Hierarchical Regression Analysis for Both Groups

Next, we analyzed the added effects of bonus, quota lifting, and scenario enrichment variables for the user group, which we refer to as model 2, and analyzed the added effects of bonus and scenario enrichment variables for the non-user group, which we refer to as model 4. The increase in R^2 for model 2 ($F=67.2$, $p\text{-value} < 0.001$) and model 4 ($F=77.7$, $p\text{-value} < 0.001$) are both significant. This means that the impact of added effects was significantly higher than that explained by control variables in model 1 and model 2. For user group, the coefficients of bonus ($b=0.156$, $p < 0.05$), quota lifting ($b=0.326$, $p < 0.001$), and scenario enrichment ($b=0.352$, $p < 0.001$) are significant, supporting H1a, H2, and H3a. For non-user group, the coefficients of bonus ($b=0.257$, $p < 0.001$) and scenario enrichment ($b=0.402$, $p < 0.001$) are also significant, supporting H1b and H3b.

Discussion

This study focuses on activities that Alibaba has launched to promote its e-commerce consumer credit service, Ant Check Later, and explores factors affecting consumers' use of the service. This study summarizes fourteen activities that Alibaba launched to promote their e-commerce consumer credit service, Ant Check Later. According to data analysis, three determinants of consumers' behavioral intention toward the service were distinguished from the fourteen activities, which are bonus, quota lifting, and scenario enrichment. The results indicate that bonus, quota lifting, and scenario enrichment encourage users to continue using e-commerce consumer credit service while bonus and scenario enrichment help entice non-users to use the credit service.

Theoretical implication

The world economy grows slower especially after the subprime mortgage crisis, and e-commerce is becoming more and more important in stimulating economy development. E-commerce companies launch their consumer credit services to release the purchasing power of consumers and promote the sales of goods in e-commerce environment. However, it is challenging for e-commerce companies to prosper their credit services because financial institutes especially banks are the main sources of

consumer credit, and credit cards are the major approach that consumers use their credit limits. Past literature mainly focuses on acceptance of credit card and does not pay much attention to e-commerce consumer credit services.

Our work tries to bridge this gap by exploring factors affecting consumers' behavior intention toward e-commerce consumer credit services and adds some interesting findings to relevant literature. This study uses "Ant Check Later" as the artifact and distinguishes three factors that will affect the acceptance of e-commerce consumer credit services. Our findings attest mainly to the hypotheses that consumers value bonus they can obtain by using Ant Check Later, quota lifting activities, and enrichment of scenarios that they can use the credit service.

Our findings indicate the importance of scenario enrichment since the coefficients of scenario enrichment are larger than the coefficients of other factors. This study also encourages academic researchers to entrench studies in practice. We distinguish fourteen marketing activities of Ant Check Later from practice and then extract factors affecting consumers' behavioral intention from those activities. This approach encourages the combination of theoretical research and managerial practice.

Practical implication

This study also offers some suggestions to practitioners of e-commerce consumer credit services. They can attract consumers to use their credit services by providing bonus, improving quota, and expanding the usage scenario. Our independent variables also offer some detailed suggestions on how to attract users. For example, they can offer "free of charge" randomly to attract users. They can also improve users' quota both temporally and permanently. For example, the 11.11 day, like Cyber Monday in the U.S., is a popular online shopping day. The sales of TMALL.com, a B2B e-commerce website of Alibaba, reached \$17.6 billion in the 11.11 shopping day of 2016. They can offer temporary increase in quota to attract consumers to use their credit services during a specific e-commerce purchase day. Practical managers should realize that scenario enrichment is the most important factor among bonus, quota lifting, and scenario enrichment because its coefficient is the largest among the three. They should break the conventional approach that only allows consumers to use credit service in their own e-commerce platforms and cooperate with other e-commerce platforms to expand the comprehensiveness of scenario of their e-commerce consumer credit services.

Limitations

The results must be interpreted recognizing that our samples consist a large majority of consumers who are students and aged between 18 and 22. This may affect the generalizability of our findings. However, the demographic profile of our subjects corresponds closely to consumer credit reports, making our samples proper respondents for this study.

Conclusion

This study examines the factors affecting the use of consumer credit services launched by e-commerce companies. The results distinguish three factors, bonus, quota lifting, and scenario enrichment, that will affect consumers' behavioral intention toward using the credit services. We also found that scenario enrichment is the most important factor among the three factors, which suggests that practical managers should pay more attention to expand the usage scenario of their credit services.

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