

Article

Reuse Intention of Third-Party Online Payments: A Focus on the Sustainable Factors of Alipay

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Abstract: An anonymous transaction environment and the advantage of virtual property have resulted in trust playing an important role in the rapid growth of online shopping in China. To satisfy this trust issue, Alibaba (China) Co., Ltd. (Hangzhou, China) invented Alipay, the largest third-party online payment service. Using a structural equation model (SEM), this paper attempts to determine whether Alipay's service quality factors are truly sustainable. The results indicate that only two of five factors—convenience and security—are significantly mediated by the sustainable performance of customer satisfaction as a mediator. The other three factors—usefulness, responsiveness and economy—were rejected for the role of customer satisfaction, even if they are accepted regarding the direct effect on reuse intention. This result implies that Chinese web companies need to make greater efforts not to ensure initial success, but instead to ensure sustainable performance.

Keywords: third party payment service; structural equation modeling; reuse intention; China; Alipay

1. Introduction

In recent years, China has experienced significant achievements in all industries and particularly e-commerce. Alibaba, the leader of the Chinese e-marketers, invented Kwangkunjie (Single's Day), one-day online sale on November 11 that is similar to black Friday after Thanksgiving in the United States. On this double eleven day, Alibaba's total turnover from all of its platforms has been 91.2 billion Yuan (US\$13.68 billion), which involved 232 countries and 467 million logistics orders. These figures represent the world record for single-day online transaction volume [1]. Alibaba's significant success on Kwangkunjie may have resulted from the most successful intermediation of Alipay, the third-party online payment system that it launched in China in 2004. Alipay charges no transaction fees and provides an escrow service that enables consumers to verify their satisfaction with the goods they purchased before releasing money to the seller. This service is critical because it gives consumers guaranteed intermediation by an authorized third party, a necessity given China's weak consumer protection laws and regulations. Its pro-activeness makes Alipay a unique payment-related service; for example, relative to U.S.-based Paypal's simple third-party payment service, Alipay provides guarantees for transactions. Alipay also provides enhanced online payment functions through integrated diverse functions, such as for mobile games, movies and others. In contrast, Samsung Pay in Korea simply provides flexible payment services. Alipay is much more attractive to customers given its integrated one-stop multi-user-friendly services.

China's third-party online payment volume increased to approximately eight trillion Yuan (US\$1.2 trillion) in 2014, with growth of 50.3% compared to 2013. Alipay has led this rapidly increasing growth in third-party online payments, with a 49.6% market share or 3.87 trillion Yuan, as shown in Figure 1 [2]. More than 300 million people in the world use Alipay for payment services at Taobao and Tmall, as

well as at many offline stores. Alipay's strong escrow support enabled Alibaba to rapidly increase its online market share in China, and other followers effectively enabled consumers in this large country to integrate online shopping with online payments and logistics through one-source, multi-channel transactions. In 2013, Alipay launched a financial product platform called Yu'ebao that enables Alipay users to deposit any remaining money in an account and earn interest. This interest-yielding new invention by the third-party payer made Alipay the leader in this e-business new frontier.

Currently, Alipay provides both third-party escrow guarantees on online transactions and interest on the unused portion of an Alipay account. In addition to these direct support services for online shopping, many more applications exist for Alipay users who frequently visit diverse game and other entertainment sites and for users engaged in informative community activities. Alipay began as an online shopping supporter by being an escrow provider and became a multi-channel third-party online banking portal site. The continuing success of Alipay certainly arises from the proactive organizational culture of Alibaba (China) Co., Ltd., which is akin to reading users' minds and pulling their demand instead of engaging in pushing-oriented forceful promotional marketing. Alipay's long-term performance could be sustainable given its user-friendly, performance-oriented marketing efforts, because the value creation based on network management with diverse participants of a certain product is key to sustainable e-business management [3].

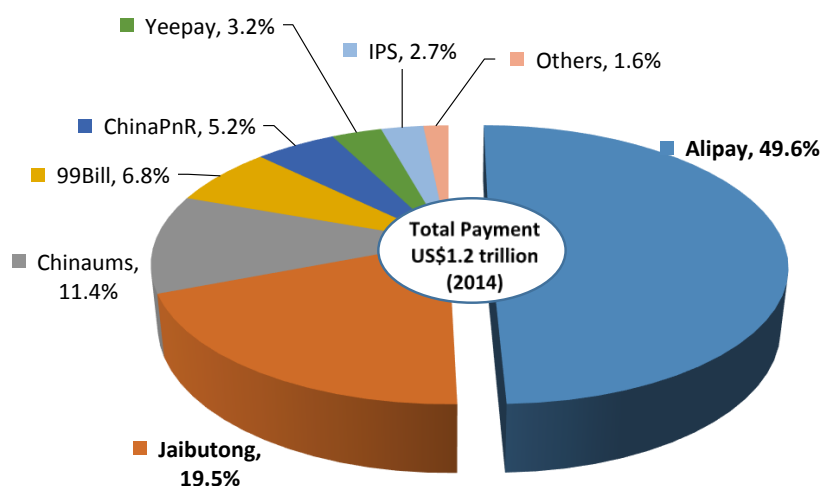


Figure 1. Third-party online payment market in China (2014). Source: China's third-party online payment market in 2014 [4].

However, as an online payment service, Alipay may require more sustainable operations for successful performance, because it is in the initial stages of the market, and the rapidly changing environment in China cannot guarantee that initial luck will carry forward to the long term. In particular, web marketing for an online payment service is also based on sustainable relationships with users. According to Bhattacharjee (2001), the sustainable performance of web services should not be based on simple, instantaneous intentions in the short term, but on reuse intentions for the long term [5]. Chinese customers are quickly adopting "multichannel" shopping behavior that is creating both opportunities and challenges for social e-commerce brands/companies, retailers and companies. Taobao and its payment system Alipay certainly provide the most appropriate marketing platform in China [6]. As previously mentioned, the U.S.-based PayPal does not provide escrow services, and Samsung Pay in Korea provides very flexible access points for payments, but no other services. Compared to these third-party online payment services, Alipay provides diverse, yet integrated services for multi-channel users. However, more is not always better, and a payment service's core competence should maintain an appropriate "reach" to enable reuse by users [7]. The purpose of this research is to determine Alipay's sustainable factors as a third-party online payment service provider. To evaluate the sustainable feasibility of the online payment service, this paper empirically tests the

relationship between the web marketing mix of Alipay and the reuse intention of users. However, a link is always missing between web marketing mix and its performance [8]. Because of this missing link, previous studies conclude that initial trust in the web marketing mix is not effective enough [6], whereas others insist that the web marketing mix is significant [8]. Therefore, this research empirically tests the role of consumer satisfaction as a mediator between the web marketing mix and the reuse intention of consumers on third-party online payment systems, with an emphasis on the unique connective characteristics of Alipay.

2. Theory and Hypotheses

2.1. Characteristics of Third-Party Online Payments

Third-party online payment services are well known as escrow services, because an escrow generally refers to money held by a third party on behalf of the transacting parties. These services are based on a contractual arrangement in which a third party receives and disburses money or documents for the primary transacting parties, with the disbursement depending on conditions agreed to by these parties. As the Alipay service indicates, this process sometimes means that an account is established by a broker to hold funds on behalf of the broker's principal until the consummation or termination of a transaction. In general, most online payment services provide an objective transfer of money along the lines of a commercial transaction. Third-party online payments work by placing money in the control of an independent and licensed third party to protect both buyer and seller in a transaction over the Internet. When both parties verify that the transaction has been completed per the set terms, the money is released. If at any point a dispute occurs between the parties in the transaction, the process moves to dispute resolution. The outcome of the dispute resolution process determines what happens to the money in escrow.

As the most representative online payment service in China, Alipay has successfully operated a third-party online payment service for online shopping at Taobao, its brother website. Because online payments are web services, Alipay's successful operation may result from the appropriate utilization of the web marketing mix. Thus, the core competence of web services, such as online payments, should be based on the capability to create and maintain relational marketing, which is different from traditional marketing [9].

Similar to other services, an online payment service could be evaluated through its service quality. In general, service quality is defined as the integrated capacity for the consumer to be satisfied with the expected service package level and its related functions [10]. Parasuraman *et al.* (2005) define e-service quality as the extent to which a website facilitates efficient and effective shopping, purchasing and delivery [11]. Wolfinbarger and Gilly (2003) define e-service quality as the beginning to the end of a transaction, including information search, website navigation, order, customer service interactions, delivery and satisfaction with the ordered product [12]. In these definitions, an e-service has a much broader spectrum than traditional or general service quality. In particular, Wilfinbarger and Gilly (2013) argue that e-service quality should be self-sufficient in fulfilling the procedural set of an online transaction. Because the online payment service is part of an online transaction, the evaluation of e-services in this research focuses on the extent to which websites create and maintain relationships through user satisfaction. Therefore, the extent of the capacity for websites to create and maintain relationships will be examined in greater detail.

2.2. Online Payment Service Quality Hypotheses

In general, service quality represents the comparative degree between expectations and performance. Generally, customers tend to compare the service they experienced with the service they expected. Unfortunately, the expected service and the perceived service are sometimes not equal, thus creating a gap that may result in a comparative level of service quality. Parasuraman *et al.* (1988) suggested that the five dimensions of this gap are summarized in the so-called RATER model as follows: Responsiveness,

Assurance (security), Tangibles, Empathy and service, Reliability (convenience) [13]. However, these determinants are offline based. Thus, Blut *et al.* (2015) conducted a meta-analysis of studies on e-service quality published during 2000–2014 and found four determinants of e-service quality: website design, fulfillment (usefulness), customer service (convenience) and security/privacy [14]. Liao and Cheung (2002) empirically tested e-banking services using seven determinants: accuracy, security, transaction speed, user friendliness, user experience (usefulness), user involvement and convenience. They found that most of these determinants are statistically significant, whereas some determinants depend on other factors, implying a stepwise or inter-relational structure of the determinants [15]. Considering all of these arguments from the perspective of a third-party online payment service, we could use the common factors of usefulness, convenience, security and responsiveness. Moreover, Alipay provides interest on the remaining money in a user's account, an economy that may be an important sustainable factor. Altogether, as a third-party online payment service provider, Alipay provides five factors related to obtaining sustainable performance through users' reuse intention; usefulness, convenience, security, responsiveness and economy.

Unlike traditional marketing, the web marketing mix emphasizes the invisible value of repurchase or reuse intention to measure "sustainable" performance. In this context, reuse intention refers to the likelihood that customers prefer to use a particular product service again. Reuse intention is positively related to the final purchase (or use) probability, which leads to direct economic benefits for companies [16–18]. Reuse intention represents consumers' subjective preferences for using a specific service and recommending it to their family and friends. Engel and Blackwell (1982) define reuse intention as the probability of an individual's desire for a certain action to be implemented [19]. Newman and Weber (1973) empirically prove that if a user is unsatisfied with a service because the service quality is lower than his expectation, then the probability of reuse may be much lower [20].

Thus, the web marketing mix aims for web service quality to drive reuse intention on the basis of relational marketing on the Internet. To increase consumers' reuse intention, websites should provide easier and more reliable access (convenience) that is very informative, amazing and suitable for web surfing (usefulness); further, they should ensure long-term profits, such as interest (economy), and should respond promptly to users' requests (responsiveness), along with stronger protection for the money transfer (security). These five service quality factors should be integrated into websites to create and maintain value, because they are interrelated with each other as a set of service quality. On the basis of these arguments, we propose the following hypotheses for third-party online payment service quality.

- H1: The degree of usefulness of a third-party online payment service has a positive effect on reuse intention.
- H2: The degree of convenience of a third-party online payment service has a positive effect on reuse intention.
- H3: The degree of security of a third-party online payment service has a positive effect on reuse intention.
- H4: The degree of responsiveness of a third-party online payment service has a positive effect on reuse intention.
- H5: The degree of economy of a third-party online payment service has a positive effect on reuse intention.

2.3. Intermediation Role of User Satisfaction on Reuse Intention

Even given similar web content, different actual reuse intentions could result from a customer's satisfaction. Several prior studies show the positive effects of customer satisfaction on reuse intention [21–23]. Oliver [21] reports that customer satisfaction is a positive antecedent of a user's attitude and a key factor that influences his or her reuse intention. However, Morgeson and Petrescu [22] point out that product (service) quality may differ depending on perceived performance and may not result in purchase (or reuse) intention. Liao and Cheung [15] also find that the determinants of service quality may have a stepwise

or inter-relational structure to each other; thus, sometimes, a higher service quality may not result in stronger reuse intention. Dow *et al.* [22] analyze the effect of customer satisfaction through e-mail marketing and find that even if the empirical results generally support the notion that the determinants can be used to effectively model e-mail user satisfaction, they find no statistically-significant evidence that spam affects overall user satisfaction in an e-mail system.

All of these arguments support the possible missing link between web service quality and reuse intention, and customer satisfaction could fill this missing link. Therefore, web service quality might be effective only when customers are fully (or partially) mediated by perceived satisfaction. On the basis of these arguments, we propose the following hypotheses for the role of a mediator between web service quality and a website's performance for reuse intention.

- H6: The degree of usefulness of a third-party online payment service has a positive effect on customer satisfaction.
- H7: The degree of convenience of a third-party online payment service has a positive effect on customer satisfaction.
- H8: The degree of security of a third-party online payment service has a positive effect on customer satisfaction.
- H9: The degree of responsiveness of a third-party online payment service has a positive effect on customer satisfaction.
- H10: The degree of economy of a third-party online payment service has a positive effect on customer satisfaction.
- H11: The higher the customer satisfaction from a third-party online payment service, the higher the reuse intention that results from the payment service.

Using the proposed hypotheses, the conceptual model of this study is presented in Figure 2. Figure 2 indicates that customer satisfaction as the intermediary could affect the stepwise approach to driving "sustainable" reuse intention. Therefore, we examine these hypotheses using the direct model (reuse intention only) and/or the indirect model (customer satisfaction as a mediator).

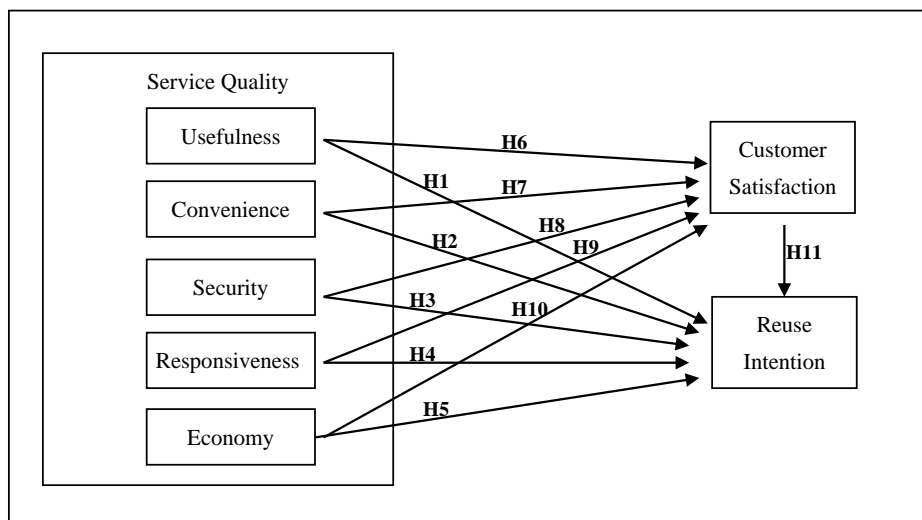


Figure 2. Research framework.

3. Methodology

3.1. Data

For the empirical research, a questionnaire survey was used to collect the data. First, a pilot study was conducted. Three experts with rich experience in Alipay payment services were invited to evaluate

the questionnaires. In addition, 10 Alipay users were invited to complete the questionnaire as a pilot test. The questionnaire was modified on the basis of the feedback received in the pilot stage. Then, a full questionnaire survey was conducted from 15 October–12 November 2015. A total of 410 questionnaires were sent randomly to users of Chinese social e-commerce websites by e-mail or through messengers using information retrieved from the Yellow Pages for various sectors and provinces. Excluding unusable or inappropriate responses and responses from those with no experience with Alipay resulted in 280 unique and usable responses (for a response rate of 68.29%). To analyze the descriptive statistics of the data, the responses given to the questions were stored in an Excel file. SPSS and AMOS were used to evaluate the strength of the relationship between variables and to achieve the research objectives. The survey sample represents various sectors: college graduates accounted for 49.3% of the sample, whereas respondents who were graduates and higher constituted 28.6% of the sample, implying that most customers (78%) familiar with e-payments have a relatively good educational background. Table 1 presents the demographic characteristics of the respondents. All of the survey respondents reported to have used an e-payment system more than once.

Table 1. Demographic characteristics.

Characteristic	Items	Percentage
Gender	Male	55.7%
	Female	44.3%
Age Range	0–20	12.9%
	20–25	35.0%
	26–30	30.4%
	31–40	17.1%
	41 and older	4.6%
Education Level	High school or lower education	6.4%
	College	15.7%
	Undergraduate	49.3%
	Graduate/master or higher	28.6%
User Experience	Less than a year	8.9%
	1–2 year	34.4%
	3–4 year	41.4%
	More than 5 years	15.3%

To address the problem of non-response bias, we compared early and late respondents, as recommended by Armstrong and Overton [24]. The 280 questionnaires were classified into two groups on the basis of their finished time. An independent *t*-test was used to identify any differences between the answers of the early and the late groups. The results indicated no significant differences in the various items of these two groups, suggesting that our sample is free from non-response bias.

3.2. Measurement

To measure all observed variables in this study, we adopted well-established multiple-item five-point Likert scales. These scales ranged from 1 (“strongly disagree”) to 5 (“strongly agree”). The detailed measurement items are presented in the Appendix.

3.2.1. Online Payment Service Quality Variables

On the basis of prior studies [6,8,9], the following hypotheses were tested empirically: online payment service quality enables convenient access for users; useful content retains interest on sites; online procedures make users feel safe and secure; and waiting time for a service is adequate and indicates good responsiveness. Subsequently, a user should gain economic benefits, such as interest on the account in the long term, to develop sustainable reuse intention. Thus, online payment service quality variables (the inputs in the analysis) include five factors: usefulness (three items),

convenience (four items), security (four items), responsiveness (three items) and economy (three items). These five dimensions were measured using a five-point Likert scale ranging from “not considering it at all” (1) to “perfectly agreed” (5) in response to questions on the degree of subjective perception regarding third-party online payment services.

3.2.2. Reuse Intention

Bhattacharjee [25] argued that the successful performance of the service system should not be based on simple, instantaneous use, but on sustainable reuse intention. Reuse intention is defined as the level of consumers’ subjective preferences for using the services again and for recommending this service to family and friends. Before customers use these services, they have specific requirements in mind. On the basis of these needs and after browsing the related information given initial experiences, customers filter, evaluate and compare the information/services and subsequently make a rational decision to select the same online service again. Therefore, in this research, we consider reuse intention as the output of the model as measured by four items.

3.2.3. Customer Satisfaction as a Mediator

Reuse intention may depend on the mediatory role of customer satisfaction. Oliver [21] empirically shows that an online payment service could affect perceived customer satisfaction, and customer satisfaction may affect users’ attitudes. Finally, users’ attitudes determine the degree of reuse intention. Therefore, this study handles the mediator of customer satisfaction using four items.

Structural equation modeling (SEM) is used to test the research hypotheses related to the latent variables. The SEM technique involves a multiple regression analysis, a path analysis and a confirmatory factor test [25]. Using SEM to test the mediation could overcome the measurement error problems in the mediator variable score, which could result in difficulties related to modeling causality and possible reverse causality in a hierarchical regression [6].

4. Empirical Results

4.1. Reliability Test

The goodness-of-fit of a statistical model represents how well the model fits a set of variables. Goodness-of-fit measures typically describe the discrepancy between the observed values and the expected values of the model in question. In the variance analysis, one of the components into which the variances are partitioned may be a lack-of-fit sum of squares. To test the model fit, we also used a number of goodness-of-fit indices recommended by many researchers, including (1) a normalized chi-square [$\frac{\chi^2}{df}$]; (2) the goodness-of-fit (GFI); (3) the root mean square error of approximation (RMSEA); (4) the comparative fit index (CFI) and (5) the incremental fit index (IFI) [26]. As Table 2 indicates, all of the diverse goodness-of-fit indices are higher than the recommended criteria. Thus, the goodness-of-fit of the measurement model is acceptable.

Table 2. Goodness-of-fit (GFI) test results.

Indices	Recommended	Direct Model	Mediation Model
$\frac{\chi^2}{df}$	<5.0 (Hair <i>et al.</i> 2010 [27])	3.089	2.921
GFI	>0.8 (Choi and Jin [6])	0.833	0.817
RMSEA	<0.10 (Choi and Gao [8])	0.089	0.086
CFI	>0.9 (Choi and Jin [6])	0.924	0.922
IFI		0.924	0.922

RMSEA, root mean square error of approximation; CFI, comparative fit index; IFI, incremental fit index.

Our proposed model must be statistically reliable and valid. The reliability test evaluates the overall consistency of a measure; the proposed method should reflect similar results when retested under the same conditions. For the reliability test, we use the widely-known Cronbach's alpha coefficient, the corrected item-total correlation coefficient and the construct reliability coefficient. These criteria are the most commonly used to measure reliability [26]. As Table 3 shows, each measure exceeds the suggested thresholds of 0.7, 0.5 and 0.8, respectively. Composite reliability or reliability rho tests if it may be assumed that a single common factor underlies a set of variables and thus crucial for the SEM [28]. However, the acceptable cutoff for composite reliability would be the same as the researcher sets for Cronbach alpha, since both attempt to measure true reliability. Moreover, the responsiveness construct reliability seems to be high, and it may indicate that some items are redundant; therefore, the construct exhibits questionable validity [28]. However, as Cho and Kim [28] argued, the deletion of the variable also may not give better consistency, and thus, we shall accept it. Thus, the measures are considered appropriate for confirming a satisfactory level of reliability in this study.

Table 3. Reliability test of the latent variables.

Latent Variables	No. of Items	Cronbach's α (>0.7)	Corrected Item: Total	Construct
			Correlation (>0.5)	Reliability (>0.8)
Usefulness	3	0.929	0.757–0.818	0.929
Convenience	4	0.882	0.748–0.781	0.883
Security	4	0.875	0.647–0.746	0.875
Responsiveness	3	0.978	0.773–0.834	0.979
Economy	3	0.903	0.712–0.785	0.905
Consumer Satisfaction	4	0.944	0.759–0.826	0.944
Reuse Intention	4	0.926	0.746–0.801	0.929

4.2. Validity Test

The validity of an assessment is the degree to which it measures what it is supposed to measure (true information). Validity analysis includes both content and construct validity components. Content validity analysis tests the representativeness of the items in the questionnaire. No reports exist of misunderstandings during the pilot test. The interviewees stated that the items are easily understood, indicating good content validity [26].

Confirmatory factor analysis (CFA) is one of the most effective tools to test construct validity. According to Campbell and Fiske [29], construct validity typically tests the extent to which the data provide the following: (1) convergent validity, the extent to which different assessment methods indicate similar measurements of the same trait (*i.e.*, ideally, the construct values should be moderately high); and (2) discriminant validity, the extent to which independent assessment methods indicate divergent measurements of different traits (ideally, these values should demonstrate minimal convergence).

As summarized by Choi and Yu [26], convergent validity occurs when (1) all factor loadings are significantly higher than the 0.5 cutoff point and (2) the average variance extracted (AVE) from the items by their respective constructs is greater than 0.5. Table 4 indicates the results of the convergent validity measured using CFA. The measurement scale indicates a strong convergent validity because all of the factor loadings are significant and higher than 0.5, and the AVE of all of the items is greater than 0.5.

Table 4. Convergent validity test on the measurement model.

Potential Variable	Items	SFL ^a	C.R. ^b	AVE ^c
Usefulness	Usefulness 1	0.985	27.903	0.821
	Usefulness 2	0.802	18.66	
	Usefulness 3	0.922	-	
Convenience	Convenience 1	0.795	16.143	0.668
	Convenience 2	0.797	16.586	
	Convenience 3	0.746	14.98	
	Convenience 4	0.921	-	
Security	Security 1	0.814	-	0.641
	Security 2	0.836	13.929	
	Security 3	0.807	13.553	
	Security 4	0.743	13.39	
Responsiveness	Responsiveness 1	0.996	-	0.938
	Responsiveness 2	0.921	35.704	
	Responsiveness 3	0.987	81.505	
Economy	Economy 1	0.841	16.784	0.759
	Economy 2	0.914	18.46	
	Economy 3	0.857	-	
Customer Satisfaction	Customer Satisfaction 1	0.823	-	0.721
	Customer Satisfaction 2	0.852	15.939	
	Customer Satisfaction 3	0.846	18.71	
	Customer Satisfaction 4	0.874	16.343	
Reuse Intention	Reuse Intention 1	0.783	-	0.790
	Reuse Intention 2	0.915	19.758	
	Reuse Intention 3	0.862	18.226	
	Reuse Intention 4	0.983	21.738	

^a SFL is an estimate of standardized factor loading; ^b C.R. is the critical ratio; ^c AVE is the average variance extracted.

As Fornell and Larcker (1981) suggest [30], the estimate of the standardized factor loadings should be significantly higher than the 0.5 cutoff point. We evaluated the convergent validity of the constructs using AVE. As Table 3 shows, the AVEs of all seven constructs are much higher than the critical value of 0.5, indicating that these seven constructs capture more than 50% of the variance in their observable measures. Therefore, we state that the convergent reliability of the constructs is satisfactory.

Discriminant validity is achieved when the square root of the AVE for the constructs is greater than any of the corresponding inter-construct correlations. Table 5 indicates that the square root of the AVE of all of the variables is greater than their inter-correlations, which supports discriminant validity.

Table 5. Discriminant validity test of the measurement model.

Construct Items	USE	CON	SAF	REA	ECO	CS	REU
Usefulness (USE)	0.906 ^a						
Convenience (CON)	0.011	0.817 ^a					
Security (SAF)	0.042	0.131	0.801 ^a				
Responsiveness (REA)	0.006	0.018	0.049	0.969 ^a			
Economy (ECO)	0.024	0.022	0.097	0.005	0.871 ^a		
Satisfaction (SAF)	0.068	0.245	0.301	0.117	0.133	0.849	
Reuse Intention (REU)	0.045	0.173	0.300	0.080	0.099	0.385	0.889 ^a

^a The square root of the AVE as a criterion of the cutting point for correlation.

4.3. Hypotheses Tests

After confirming the reliability and validity of the questionnaire items, we test the research hypotheses. The maximum likelihood estimation method is used for hypotheses testing with the SEM. The empirical findings of the first stage of the direct model (without considering customer satisfaction as the mediator) are shown in Figure 3.

In the direct model involving the five service quality factors (usefulness, convenience, security, responsiveness and economy) and reuse intention, the results indicate that all of the service quality factors have a positive impact on customers' purchase intention. Thus, H1–H5 are supported ($p < 0.1$). Even if H1 is marginally accepted at the significance level of 0.1, this result implies that at least the initial success of Alipay results from being well-organized, customer-oriented or customized service quality. Among the coefficients, the convenience factors indicate the largest impact on reuse intention. Thus, the primary purpose of a third-party online payment service may be to address the urgent need for convenient facilitation of online shopping.

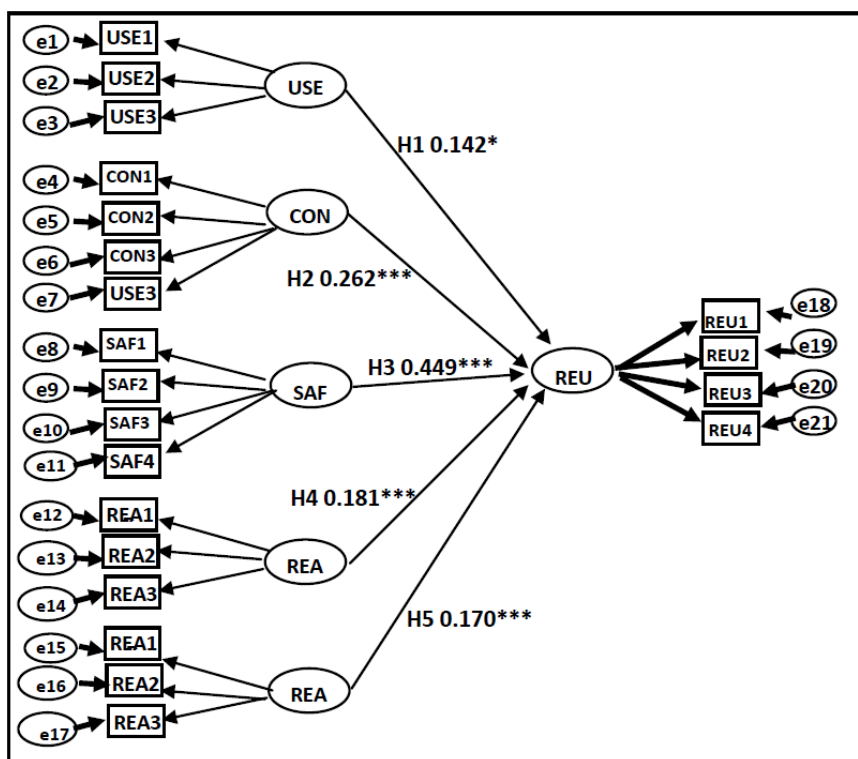


Figure 3. Results of the direct structural model. *, ** and *** denote all significant coefficients at 0.1, 0.05 and 0.01, respectively.

To test the mediating effect of customer satisfaction, the relationships among the variables should satisfy all of the conditions suggested by Baron and Kenny [31]: (1) the independent variable should significantly influence the dependent variable; (2) the independent variable should significantly influence the mediator; (3) the mediator must significantly influence the dependent variable; and (4) the impact of the independent variable on the dependent variable must diminish after controlling for the effects of the mediator. If any of these conditions are not satisfied, no mediation occurs. If all of these conditions are satisfied, and the influence of the independent variable becomes non-significant in the presence of the mediator, the effects of the independent variable are said to be “completely” or “fully” mediated by the mediator. If all of the conditions are satisfied and the influence of the independent variable remains significant in the presence of the mediator, the effects of the independent variable are said to be “partially” mediated [32].

We run the indirect model of the relationship between the Alipay online service payment’s service quality and reuse intention using stepwise mediators of consumer satisfaction. As shown in the Figure 4, the results indicate that the two service factors of convenience (H2) and security (H3) have a direct positive effect on reuse intention at the 90% significance level ($p < 0.1$), whereas usefulness (H1), responsiveness (H4) and economy (H5) have a positive, but not a significant effect on reuse intention. Therefore, Condition (1) is not supported, except for only two variables. For these two variables, Conditions (2), (3) and (4) are supported by H7 and H8, and H2 and H3 are compared to H7 and H8 and H11, respectively. Therefore, we state that convenience and security are the key sustainable factors for Alipay with the full mediator of consumer satisfaction.

However, because the other three variables do not indicate statistical significance in the indirect model, no mediator effects exist at all. Therefore, the majority of the service characteristics of a third-party online payment are not effectively workable for Chinese online shopping because of the weak points of usefulness (H1), responsiveness (H4) and economy (H5). Even if Alipay provides diverse applications for user-friendly customized web service content, these useful service characteristics do not satisfy customers. Customers do not indicate strong reuse intention even with respect to the proudly launched Yu’eobao service that offers interest yields on unused account balances, resulting in the rejection of H5. At least these three variables have a positive impact on reuse intention even if the impact is not significant, thus implying that Alipay should make greater effort to convince the consumer of these core competence potentials in online payment. Moreover, the two variables of convenience (H2) and security (H3) should be considered as core competences at present for Alipay to use to obtain sustainable performance. Thus, Alipay may need to make these strategic variables more valuable to have customers accredit them because at least these two strategic variables indicate the full mediator effect of customer satisfaction, as well. Therefore, Alipay should focus on enhancing the performance of convenience (H2) and security (H3) (see Figure 4).

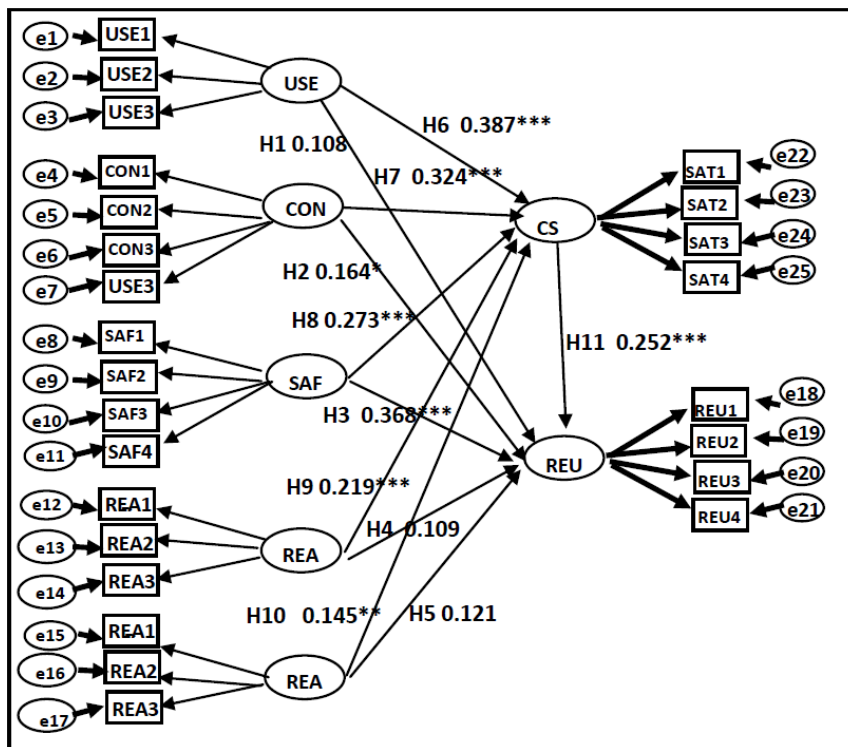


Figure 4. Results of the indirect structural model. Notes: *, ** and *** denote all significant coefficients at 0.1, 0.05 and 0.01, respectively.

5. Discussion and Conclusions

This study examined the influence of dynamic trust on social e-commerce based on the web marketing mix theory. In China, the local competitors with cultural-friendly web companies based on social e-platforms gain much more effective initial and ongoing trust, compared to the global leaders, such as eBay and Facebook. The empirical results show that the issue of website dynamic trust is one of the most critical obstacles related to online transactions in social e-commerce. Over the past 10 years, many researchers have reported that trust is crucial for e-commerce; however, only a few of them noticed that trust is a kind of dynamic process. Customers' trust constantly transforms during the different stages of a transaction. Therefore, we classified trust as initial trust and ongoing trust based on the perspectives of sustainability. In order to ensure successful performance, websites need to have a deeper understanding of how initial trust and ongoing trust are developed and how they affect purchases.

Alibaba (China) Co., Ltd. provides a good benchmarking case for developing a third-party online payment service in China and worldwide. However, in its initial stage, sustainable issues for the successful performance between sellers and customers were the most significant obstacles for Alibaba. To overcome these barriers, Alibaba attempted to invent a diverse set of multi-channel services, including the most outstanding feature of the third-party online payment of a type of escrow guarantee system for online transactions. In 2002, Alibaba launched a strategy to address another trust-related risk management issue and created value from this trust risk by introducing "TrustPass." Alibaba's successful case educated the Chinese government and led to changes in the regulatory platform. Because this service provides another guarantee system for local vendors, many local governments provided public funding and cooperated with Alibaba to subsidize small local companies to allow them to obtain Alibaba's TrustPass. Alipay is another guaranteed system that enables a third party to manage the win-win game rule of transparency in online transactions. All of these efforts by Alibaba (China) Co., Ltd. are based on the customized market- and performance-oriented paradigm of its business strategy, which seems to work well, at least presently.

However, all of these efforts should be evaluated more precisely and systematically for sustainable management. Thus, this research empirically tested the sustainable features of Alipay's service quality. By comparing previous studies, we selected the core of the service quality in five determinants: usefulness, convenience, security, responsiveness and economy. All five determinants worked well for customer reuse intention, which explains Alipay's current success in the market. Unfortunately, however, only two of the five—convenience and security—showed sustainable performance with the support of customer satisfaction as a mediator. Customer satisfaction is crucial to sustainable performance by increasing the reuse intention, which is key for customer relationship management. Because the e-business paradigm is the creation of values on the basis of network management among all stakeholders, sustainable trust in terms of customer satisfaction is critical for sustainable performance. The two factors of convenience and security may fit this criterion and could be considered the core competence or necessary condition for sustainable performance.

The other three determinants of usefulness, responsiveness and economy may be considered complementary or sufficient conditions for sustainable performance in Alipay. Even if they are not statistically significant, these factors should be considered "determinants"; thus, Alipay should make greater effort to enhance the functioning of these factors for the role of customer satisfaction as a mediator for reuse intention. As Choi and Jin [5] conclude, this partial fulfillment of sustainable performance comes from the unique character of Chinese culture. Even if Chinese people emphasize "*Guanxi*" (social relationship), it is based at its roots on mutual economic benefits, not just social friendliness. These mutual economic benefits are why the initial trust in Alibaba (China) Co., Ltd. is partially mediated by ongoing trust [5], and the majority of the determinants in this paper did not indicate any mediation effect for customer satisfaction. Because a transparent and, thus, reliable market environment is crucial for an advanced economy, the Chinese government should also more strongly emphasize the promotion of the functioning of these factors through both diverse incentives and regulatory measures.

Although the growth rates of northeast Asian countries, such as China and Korea, still lead the global economy, their sustainable performance cannot be guaranteed to continue. Thus, priority should be given to sustainable strategies from the perspective of the overall performance of the e-business ecosystem. However, because of the complexity of a sustainable operation for a collaborative ecosystem, visualizing the performance of these sustainable strategies and practices is particularly difficult. Even so, the government's failure to engage in a market-oriented implementation of its e-business policies may result in losing the public's trust, and then, finally, an oversupply or a demand shortage may worsen market performance [5]. This empirical test may have some limits in its implications due to the more precise approach with recent technologies, such as the bootstrapping procedure. It will be future tasks to enhance the implications and suggestions. Nonetheless, this paper strongly emphasizes that today's success may not guarantee tomorrow's success, at least in the Alipay case. In order to sustainably maintain its success on third party payment, Alipay should make more customized efforts for the reuse intention. Especially, Alipay needs to develop a complement role with the traditional off-line banks, because they have much stronger reuse intentions and motivations. Therefore, this study emphasizes the importance of creating a new paradigm of field- and performance-oriented strategies. Moreover, the intermediary role of customer satisfaction in addressing sustainable performance cannot be emphasized strongly enough, particularly in transient economies, such as China and Korea [3].

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Appendix

Table A1. Measurement items for latent variables.

Strongly Disagree→Strongly Agree	1	2	3	4	5
1. Questions about Usefulness					
Q1: Using Alipay can save time	1	2	3	4	5
Q2: Without a balance in my account, I can pay using Alipay	1	2	3	4	5
Q3: Alipay provides diverse content	1	2	3	4	5
2. Questions about Convenience					
Q4: It's much easier than any other third-party payment service	1	2	3	4	5
Q5: It's much more convenient than any other third-party payment service	1	2	3	4	5
Q6: It has no limits its use at any time and in anyplace	1	2	3	4	5
Q7: Obtaining support in an emergency is very quick	1	2	3	4	5
3. Questions about Security					
Q8: It provides a reliable access and transaction process	1	2	3	4	5
Q9: I believe that private information will not be revealed	1	2	3	4	5
Q10: Hackers can't easily intrude into my payment process	1	2	3	4	5
Q11: Alipay's security system won't makes any errors	1	2	3	4	5
4. Questions about Responsiveness					
Q12: Access to Alipay is very quick	1	2	3	4	5
Q13: Processing time on Alipay is quick	1	2	3	4	5
Q14: I can quickly cancel an Alipay payment	1	2	3	4	5
5. Questions about Economy					
Q15: Alipay can save on fees	1	2	3	4	5
Q16: Alipay gives me interest benefits on my account balance	1	2	3	4	5
Q17: Sometimes, I may expect to get rewards based on my use record	1	2	3	4	5

Table A1. Cont.

Strongly Disagree→Strongly Agree	1	2	3	4	5
6. Questions about Customer Satisfaction					
Q18: I like to use Alipay for online shopping	1	2	3	4	5
Q19: I am satisfied with the payment method overall	1	2	3	4	5
Q20: I am satisfied with the customer service center	1	2	3	4	5
Q21: Compared with other services, Alipay provides the best service	1	2	3	4	5
7. Questions about Reuse Intention					
Q22: I am currently using the service	1	2	3	4	5
Q23: It is likely that I will reuse the service in three months	1	2	3	4	5
Q24: I'll try every new Alipay application	1	2	3	4	5
Q25: I want to recommend the service to my friends and family	1	2	3	4	5

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