

Content, Enjoyment or Payment? Factors Influencing Consumers' Purchase Intention in Mobile Reading: An Empirical Study from China

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Abstract: **Purpose** – The development of mobile devices leads to the popularity of mobile reading. This paper aims to investigate the influential factors driving consumers' intention to pay for e-books on Apps. The results can be used as references for improving service quality and increasing purchase rate of mobile reading services.

Design/methodology/approach – 413 effective data was collected through questionnaires oriented to possible potential mobile readers by convenient sampling method of non-random sampling approach. Questions about respondents' demographic information, mobile reading habits and the perception of relevant variables were included. SEM was employed as the analysis method towards the theoretical model.

Findings – The results show that content characteristics along with enjoyment and payment characteristics all present significant effects on purchase intention. Specifically, perceived cost performance and perceived cost enjoyment show the strongest impact. Conversely, the correlation between perceived payment convenience and purchase intention is not significant.

Practical implications – This study can help mobile reading service providers acquire a better understanding of consumers' reading patterns, improve product design and sales patterns and eventually switch users' reading behavior to payment behavior.

Originality/value – The paper is one of the first to study purchase intention in the field of mobile reading. Study is conducted from the views of content characteristics, enjoyment characteristics and payment characteristics. Enjoyment, quality and cost are integrated into cost enjoyment and cost performance. Findings can provide some managerial insights for service providers to get deeper knowledge of users' demands and make their mobile reading service more profitable.

Keywords: Mobile Reading; Content; Enjoyment; Payment; Consumers' Purchase Intention

1. INTRODUCTION

From Oracle, bamboo slip to paper-books and then to digital-books, every transformation of knowledge carrier has profoundly changed people's reading habits. In recent years, the development of mobile network technology and the steady reduction of the manufacturing costs of intelligent terminal create favorable condition for smartphones to be indispensable private equipment. The total number of global smartphones has undergone tremendous growth to 1.43 billion^[1] while the shipment reached 0.97 billion at the end of 2013^[2]. Official figures also showed that mobile devices had already outpaced PC to become the main Internet access. As the result, information access has been transferring from an online environment to mobile environment^[3]. Under this context, various mobile applications (Apps) such as mobile game app, mobile reading app, mobile payment app and mobile learning app have become increasingly significant and widely adopted by mobile network users especially by smartphone users for the pertinent and attractive services they provided^[4]. According to Portio Research, the number of mobile application users will reach 4.4 billion by the end of 2017^[5].

Mobile reading refers to personal reading behavior on mobile handhold devices (mobile phones, PDA, MID, PSP, MP4, e-readers, etc.^[6]) and it has become more and more popular within the mobile application market. Juniper research predicted the global mobile reading market will reach 9.7 billion dollars by 2016^[7]. Different from the traditional reading, mobile reading emphasizes smartphone terminal and professional e-readers.

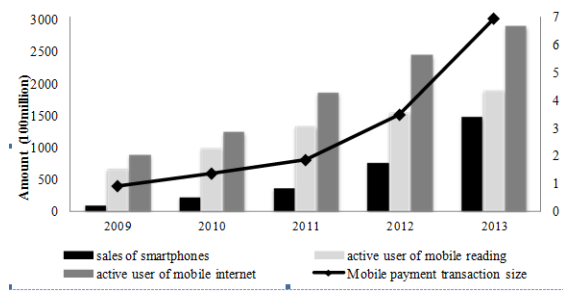


Figure 1 the background data of mobile reading in China

In china, the number of active users of mobile internet, the sales of smartphone, and the size of mobile payment transaction have increased rapidly in the last five years. Hence, super-duper hardware and network condition provide a mature environment for the development of mobile reading industry (as showed in figure 1). In addition, mobile reading can exploit the scattered fragment time of modern life and make full use of ubiquitous networks that traditional reading can not cover. The penetration rate of mobile reading has increasing quickly, while about 80% of the mobile network users have ever read on mobile devices in 2013^[8]. On account of the integration of portable and flexible TIME (Telecom, Internet, Media and Entertainment) services, mobile reading industry appeals to various stakeholders like IT vendors, telecom carriers and content providers. At present, three major telecom carriers in China (China Mobile, China Unicom and China Telecom), publishing houses and media groups are all involved in mobile reading product and service industry. Various new reading applications appear constantly. Contrary to pervasive acceptance and usage, consumers' willingness to pay for digital reading contents is relatively low and has been reducing gradually. Statistics shows only 38.7% among the users who have ever conducted digital reading behavior can accept pay-read services, decreased 1.4% from the 2012 level. Acceptable average price of a single e-book suffers a sharp fall to 1.28 RMB too. This phenomenon is in conflict with the mobile reading business model that relevant providers mainly make a profit from selling their contents and devices.

Therefore, the maturity of external environment, along with the change of modern life-style makes mobile reading to be a generally accepted service, but users' payment intention need to be carefully cultivated. Thus, this research is meaningful to investigate the influential factors that drive consumers' intention to purchase mobile reading and the results will provide references for improving service quality and increasing purchase rate of mobile reading. The remainder of the paper is organized as follows. Firstly, we review previous literatures related to mobile reading; next, theoretical model and

hypotheses are developed; then, following this with two sections detailing the methodology and analysis results. At the end of this paper, concluding remarks is presented, including theoretical and practical implications, limitations and suggestions for further researches.

2. LITERATURE REVIEW

Empirical study about investigating mobile reading usage is a hot spot in recent years. The first e-reader was launched in 1998, then e-books have been on great popularity for more powerful storage capacity and better portability compared to p-books^{[9][10]}. Some researchers discussed their usability and association with p-books, which is pivotal for enhancing students' reading experience^[11]. Other works focused on e-reading's strength and drawbacks. For example, Woody et al found that students are more likely to be tired when reading on a screen rather than on a paper^[12]. Besides the theoretical studies, researches also conducted e-reading study from a behavioral perspective. Williams et al. found that subject norm, image, perceived usefulness, perceived ease of use and cost are efficient indicators of e-readers use intention^[13]. West and Ei carried out an empirical study to better understand the habit, attitude and preference of mobile readers by examining when, how, why and to what extent people in developing countries may read on mobile devices. They also highlighted current opportunities and challenges related to mobile reading^[14].

From previous works about mobile reading, we can draw some conclusions: firstly, early-stage works mainly focused on e-books on professional e-reader devices such as TPC, PSP or MP4. But owing to the rapid development of mobile technology and remarkable portability of smartphone, it has already replaced MP4 and PDA to be the most frequently used terminal than other mobile device^[15]. Therefore, efforts should be partly transferred to research on the e-reading apps of smartphone; secondly, although lots of modifications and extensions have been adopted to study reading behavior, most of these studies still were considered within the theory of reasoned action (TRA)^[16], the theory of planned behavior (TPB)^[17] and the technology acceptance model (TAM)^[18]. But mobile reading application system is different from traditional information system because the latter was originally set to suit environment under learning and working condition, thus it is not suitable for recreational research; Finally, related behavioral research mostly attention to the adoption, usage, continuous usage and satisfaction, achievements are relatively few on payment behavior towards e-books. Additionally, with the development of mobile internet service market, competition among mobile reading providers is increasingly fierce. There are three major profit models on mobile reading industry. That is, making profits from content purchase behavior of

front-end users which is influenced by accessible payment approaches and users habits; from online advertisement from advertisers; from value-added service like publishing paper books, recomposing e-books to games or movies. The first model is the principal part. Therefore, acceptance and usage of mobile reading are not the only determinants, the users intention and behavior to pay for mobile reading service are also critical for the survival and success of relevant providers. Thus, it is vital to investigate the factors influencing customers purchase intention. A series of researches on mobile service payment behavior have been conducted before. For example, Kuo et al. proved service quality, customer satisfaction and perceived value were positively affecting post-purchase intention of mobile value-added services^[19]. Another work revealed utilitarian value, hedonic value (perceived value), and perceived risk have significant effect on customers' repeat purchase intentions in B2C e-commerce^[20]. Therefore, the purpose of the paper is twofold: to develop, apply and empirically test theoretical model within the context of mobile phone apps in order to investigate essential factors that drive consumers' intention to pay for e-book in APP, and to provide some insights for relevant content and service providers to design and promote their products.

3. HYPOTHESES DEVELOPMENT AND STRUCTURAL FRAMEWORK

(1) Hypotheses development

A. Flow experience

Based on consumer behavior theory, psychological factors are significant constructs to affect consumers' behavior, which is also applied to the adoption and usage of information technology. Among various psychological factors, flow theory is the most outstanding one. It was coined in 1975 by Csikszentmihalyi and became one of the related theories explaining intrinsic motivations developed in positive psychology along with self-determination theory^[21]. Flow theory explains why people sometimes completely involved in activities. Experience gained in a state of flow was referred as flow experience. It was first applied to online environment by Hoffman and Novak. According to tests on flow experience toward different online environment, they found that various online behavior such as online gaming, online shopping and email will produce various flow experience^[22]. After that, flow theory has been applied to many online research field such as online banking^[23] and online games^[24]. Hoffman, Novak and Yung also discovered that flow experience will reach the peak when people seek information online which is followed by online reading and writing^{[25][26]}.

Under the background of mobile reading, users can get rich information such as news, literatures, comics and other multimedia information through

smartphones, which shows cheerful experience and a positive attitude towards life. Therefore, this research consider flow experience (FE) as a motivational paradigm to explain user' mobile reading behavior. Furthermore, we define flow experience as users' total involvement, concentration and absorption in reading activity. That is to say, readers in flow state will obtain a sense of time distortion, lose their self-consciousness concentrating only on their ongoing activities and are unable to recognize changes in their surroundings.

In this paper, perceived cost enjoyment is defined to describe readers' flow experience in mobile reading. Although there have not been a conceptualization in previous study, we can find this kind of description in practice. For example, eBay uses "ratios of enjoyment per cost" to summarize consumers flow experience in online shopping, which is with the corresponding to the perceived cost performance. And perceptions of "Le jia bi" are related to cost enjoyment in China^[27]. Flow experience was proposed to positively affect user's dependence on smartphone and perceived cost enjoyment towards mobile reading, the hypotheses are as follows^[28].

H1. Flow experience will positively affect users' perceived cost enjoyment toward mobile reading.

H2. Flow experience will positively affect users' path dependence toward mobile reading

B. Path dependence

Researches in both marketing and economic field regard inertia as the persistence in consumer choice data whereby consumers have a higher probability of choosing products that they have purchased in before^[29]. Some studies found it also exists in advertising acceptance and brand choice^[30]. Kuo et al. also revealed that consumers' inertia would affect repeat purchase intention^[31].

For inertia stands for consumer heterogeneity in habits and focus more on behavior, the conception of path dependence (PD) was proposed in 1985, which can represent behavioral habits along with mental reliance to rely on and are constrained by earlier choices. Path dependence was improved by researchers such as W. Brian Arthur and North^{[32][33]}, and then it has been widely used in the field of political science, sociology, economics and management science. Sunk cost is a major cause of path dependence, each transformation of behavior needs to pay corresponding financial and emotional price. So this research defines path dependence as users' reliance on the mobile reading apps of smartphone. Once it was used before to reading, it was the first considerable choice next time when users want to read or search for information and relax. Path dependence is considered as an important variable in the mobile reading context. Meantime, smartphone is become more valuable while user's path dependency is high, no matter what the reality is.

In this paper, perceived cost performance is defined to describe the ratios of performance per cost in mobile reading. Readers who have used to and relied on the mobile reading apps of smartphone can pay less financial and emotional price, which means they will perceived more cost performance. Therefore, this article puts forward following hypothesis.

H3. Path dependence will positively affect users' perceived cost performance toward mobile reading.

C. Perceived substitutability

The phenomenon that only one manufacturer exists in an industry is called monopolistic, which means there is no competition in the market. But in reality, there are several providers that always offer similar products with slight difference. More competitors exist in the market, more opportunities for people to choose the products from different providers and higher substitutability appears.

Perceived Substitutability (SU) refers to individual perception on whether a specific product or service can be solved by existing others^[34]. When a product be considered as a substitute of another, they can share similar physical or functional properties. So substitute products can satisfy the same needs and can often replace the other^{[35][36]}. Nowadays, there are many the mobile reading applications that provide similar contents, and most contents on them are not free of charge. Lots of users regard applications just as reading medias but not reading resources. Therefore, if perceived substitutability is high, users are more likely to find free contents from other approaches. Under this background, perceived substitutability is defined as the extent to which people think how easily they can find free resources from other ways. To be specific, it depends on how hard users can find free information from alternative apps and webpages. In this research, we thought perceived substitutability will affect perceived cost performance and purchase intention, so the hypothesis was proposed as following.

H4. Perceived substitutability will negatively affect users' perceived cost performance toward mobile reading.

H5. Perceived substitutability will negatively affect users' purchase intention toward mobile reading.

D. Perceived cost performance and cost enjoyment

Value is an element in the means-end (attribute-consequence-value) hierarchy and involves higher-level goals that motivate and direct consumers' behavior and decision making. According to the exchange theory in marketing researches, perceived value was considered as precondition of purchase intention^[37]. Other studies also provided empirical evidence for the positive effect between them^{[38][39]}.

As the classification of perceived value, some researches considered it as utilitarian value and hedonic value while utilitarian value refers to non-

emotional outcomes and hedonic value means emotional aspects^{[40][41]}. Other researches defined it as four dimensions, including emotional value, social value, quality value and cost value. Empirical studies also were conducted to prove significant correlation between these dimensional values and payment intention^{[42][43]}. Hence, we regard perceived value as an important dimension in our research and defined it as consumers' overall assessment of the mobile reading services. Moreover, under the context of mobile reading, this research rules out social value, integrates quality, cost and emotion to cost enjoyment and (CE) cost performance (CP), the hypotheses are described in details below.

H6. Perceived cost performance will positively affect users' purchase intention toward mobile reading.

H7. Perceived cost enjoyment will positively affect users' purchase intention toward mobile reading.

E. Perceived payment convenience and payment risk

Payment activity plays an important role as the last step of purchase behavior and users have to bear uncertainty and risk in this step^[44]. Therefore, the dimension of perceived payment characteristics was put forward in this research.

The conception of convenience was proposed by Copeland in 1923 when he was classifying consuming products. Mobile payment is more effective compared to traditional payment without time and space restrictions. This significant advantage is called payment convenience which is very attractive to young people that keen on fashion consumption. Some studies suggested that convenience is one of the dependent variables toward mobile payment^{[45][46]}. Brown defined convenience from five dimensions namely time, place, acquisition, use and execution. Time dimension means products should be provided at a time that is more convenient for consumers, place dimension means product may be provided in a place that is more convenient for the customer, acquisition convenience means it is easy for consumers to access to products, usage convenience means the products are easy to use and execution convenience means someone provided the products^[47]. In terms of mobile reading, this paper adopt usage dimension as the research variable because this study focuses on the analysis of purchase intention but not payment service adoption.

Risk was firstly defined in decision-making field as users' understanding of possible results and hazards, then researchers in consumer behavior proposed the conception of perceived risk. Bauer consider perceived risk as uncertainty and decision makers are not necessarily know the consequence absolutely^[48]. After that, it was developed to subjective risk and objective risk, followed by the classification of psychological risk, functional risk, social risk, economic risk and temporal risk in 1993^[49].

Whether consumers would purchase a certain product

depends on their comparison of the costs and benefits. When costs exceed benefits, consumers may give up the purchase behavior. Previous works also suggested that perceived risk is one of the major factors for consumers' resistance of finance-related mobile services with perceived fee^[50, 51, 52]. So it is appropriate to consider perceived payment risk as a constructs in this study. Meantime, this research only takes economic risk among the five dimensions of perceived risk into account for the major concern of consumer is financial loss in the process of payment^[53]. Consequently, this paper define perceived payment risk (PR) as the possible loss such as privacy financial information or data and propose a negative link between it and purchase intention. Therefore, we propose hypotheses as following.

H8. Perceived payment convenience will positively affect users' purchase intention toward mobile reading.

H9. Perceived payment risk will negatively affect users' purchase intention toward mobile reading.

(2) Structural framework

We therefore derived the conclusion from the motivation, purpose, literatures review and hypothesis development that flow experience positively influences path dependence and perceived cost performance; path dependence positively influence perceived cost enjoyment; perceived substitutability negatively influence perceived cost enjoyment and purchase intention; perceived cost enjoyment, perceived cost enjoyment and perceived payment convenience positively influence purchase intention; perceived payment risk negatively influence purchase intention. The overall research framework is shown as Figure 1.

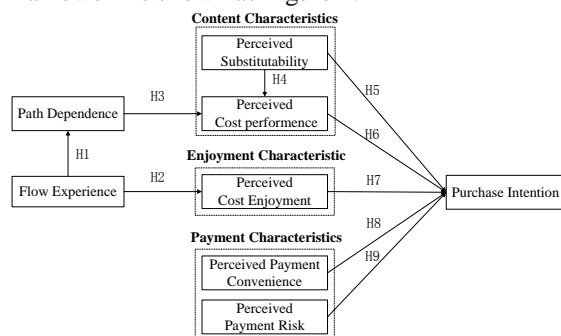


Figure 2 Framework of the Study

(3) Research method

A. Study participants

In this study, participants are defined as “people who have ever read on mobile phones and may have intention to pay for it”. Thus people of all social classes and age stages are potential respondents of this research. Considered the wild range of target group, this study adopted a survey methodology employing questionnaire. The questionnaire was distributed from May 10, 2015 to June 10, 2015 by

convenient sampling method of non-random sampling approach with physical and electronic ways. After the survey was ended, part of the samples on which participants announced that they have never read by smartphone was ruled out.

B. Measurement instrument

The questionnaire contains 2 parts. There are 9 questions in part 1 among which 4 questions collected basic information including gender, age, education and social status; the remainders of part 1 were designed to assess the participants' preference and habits on mobile reading. Part 2 consisted of 8 variables and 24 items which measured the constructs to fit the context of this study and all items used a five-point Likert scale ranged from 1, for ‘strongly disagree’ to 5, for ‘strong agree’.

In order to assess the clarity, comprehensiveness and appropriateness of the question and layout, a pre-test was conducted within 30 college students to identify potential problems and average response time. According to the feedback, minor changes were made on wording to make it as precise as possible and then paper-print and web-based approaches were adopted to collect data. Cronbach's alpha based test was carried out to identify the reliability of the constructs. Constructs which present a weak value were dropped from the proposed research model. According to the results of per-test, the following constructs were confirmed to be possible determining factors of intention to pay for e-books on APP: 4 items for flow experience (FE1-FE4), 4 items for path dependence (PD1-PD4), 4 items for perceived substitutability (SU1-SU3), 3 items for perceived cost performance (CP1-CP3), 3 items for perceived cost enjoyment (CE1-CE3), 2 items for perceived payment convenience (PC1-PC2), 2 items for perceived payment risk (PR1-PR2) and 3 items for purchase intention (PI1-PI3) (see Appendix A).

C. Data analysis method

Because some of the items have been used before but not in the background of mobile reading, slightly modification was conducted to fit the research purpose and products features. The reliability of the factors was examined by Cronbach's Alpha value.

Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) approaches were also adopted for their powerful statistical ability to examining relations among factors and items^[54]. CFA plays an important role in assessing the measurement model before structural evaluating is conducted; SEM affords coinstantaneous analysis of measurement model and structural model, and identifies the relation between constructs and measurement items, which has proven highly suitable for IS research. In the process of SEM analysis, latent variables are displayed as ellipses while manifest variables are depicted as rectangles, and One-way arrows imply a

hypothesis relationship between two factors. SEM including 2 parts: measurement model evaluating the relations between latent variables and variables from the factor analysis and the structural model assessing the relations between the latent variables. AMOS 21.0 and SPSS 18.0 were employed as the processing tools.

4. FINDINGS AND RESULTS

This section presents the results composing of respondents' profiles information, measurement model analysis including reliability, convergent validity and discriminant validity and structured model analysis including model fit and hypotheses testing. Details are as follows.

(1) Respondents' profiles

Israel proposed that the more samples drawn, the more statistical significance will be found^[55] and Hair suggested that the random of samples should be at least 5 to 10 times the number of research variables^[56]. This study contains 8 constructs and 24 items, so the number of questionnaires gathered should be over 240, which is consistent with the theoretical effective sample size.

Specifically, 487 responses were recycled including 285 through offline and 202 through online approach. Except parts of samples with almost completely

similar answers, shortly response time and announcements of never reading on phone, we get 413 effective questionnaires. The profiles information was presented in table 1.

With regard to the demographic information of our dataset, 47% of the 413 respondents were male and 53% were female. On the age front, the largest feedback was received from the 18~24 age group (76%) and followed by the 25~30 age group (15%). Most of the respondents were students (59%) and an overwhelming majority of the 413 samples possess either a Bachelor's or Master's degree (92%). This distribution is formed because the main part of mobile readers in China is young people, and especially university students or researchers have relatively high rate of mobile reading habit for their study and research.

The data in table 1 showed that mobile reading has a wildly target groups, especially is popular in 18~40 age group. Furthermore, the frequency and duration of mobile reading is relatively high in this group. But, people's willingness to pay for reading contents is low. For example, 64% respondents have never performed an e-reading purchase behavior and just 3% of the respondents paid for e-books over 10 times.

Table 1 Profile of Respondents

Measure	Items	Frequency	Percentage
Gender	Male	196	0.47
	Female	217	0.53
Age	Under 18	3	0.01
	18 ~ 24	313	0.76
	25 ~ 30	61	0.15
	31 ~ 40	28	0.07
	Over 40	8	0.02
Education background	Junior college or less	23	0.06
	Undergraduate	255	0.62
	Master	124	0.30
	PHD	11	0.03
Occupation	Students	243	0.59
	Non-students	170	0.41
Frequency of reading on smartphones	Seldom(several times a month)	98	0.24
	Often(several times a week)	98	0.24
	Usually(once or twice a day)	48	0.17
	Always(several times a day)	150	0.36
Duration of each reading	Under 15 minutes	84	0.20
	15 ~ 30 minutes	180	0.44
	30 ~ 60 minutes	93	0.23
	1 ~ 2 hours	35	0.08
	Over 2 hours	21	0.05
Occasion of reading	On the car	150	0.36

	Bedtime	231		0.56
	noontime	113		0.27
	At any time	211		0.51
Contents of reading	Novels	214		0.52
	Magazines	124		0.30
	Academic materials	109		0.26
	News	310		0.75
	Comics	28		0.07
Times of purchase e-books	Never	264		0.64
	1 ~ 2	87		0.21
	3 ~ 5	36		0.09
	6 ~ 10	12		0.03
	Over 10	14		0.03

(2) The measurement model

Measurement model should be examined before structural model because its result can reflect the desired constructs or factors under this study. We used CFA to examine reliability, convergent validity and discriminant validity to analysis the measurement properties of constructs. The properties of the

measurements and the descriptive statistics are presented in Table 2. Reliability refers to the internal consistency and stability of the questionnaire, reflecting the truthfulness of the index under test, the Cronbach's Alpha value of constructs range from 0.864 to 0.947, which shows high (0.70-0.89) reliability of the questionnaire^[57].

Table 2 Item Reliability Statistics

variables	Items	Corrected Correlation	Item-Total	Cronbach's Alpha	loadings	AVE ^a	CR ^b
Path Dependence	PF1	0.746		0.864	0.874	0.6190	0.8644
	PF2	0.775			0.901		
	PF3	0.677			0.679		
	PF4	0.659			0.663		
Flow Experience	FE1	0.780		0.908	0.835	0.7127	0.9084
	FE2	0.812			0.866		
	FE3	0.769			0.818		
	FE4	0.809			0.857		
Perceived Substitutability	SU1	0.830		0.928	0.867	0.8118	0.9282
	SU2	0.860			0.910		
	SU3	0.867			0.925		
Perceived Performance	CP1	0.805		0.905	0.867	0.7639	0.9066
	CP2	0.819			0.884		
	CP3	0.813			0.871		
Perceived Cost Enjoyment	CE1	0.765		0.895	0.816	0.7418	0.8959
	CE2	0.806			0.877		
	CE3	0.809			0.889		
Perceived Payment Convenience	PC1	0.812		0.896	0.908	0.8119	0.8962
	PC2	0.812			0.894		
Perceived Payment Risk	PR1	0.868		0.929	0.944	0.8688	0.9298
	PR2	0.868			0.920		
Purchase Intention	PI1	0.869		0.947	0.885	0.8408	0.9406
	PI2	0.901			0.932		
	PI3	0.899			0.933		

Note: CR=Composite Reliability, AVE=Average Variance Extracted

Convergent validity reflects the extent to which several items of each construct can actually capture and measure this construct. It can be assessed by the loading of two factors: Average Variance Extracted (AVE) and Composite Reliability (CR)^{[58][59]}. Values

of composite AVEs and CRs are considered adequate, with AVEs all above 0.6 and CRs all above 0.85. Therefore, the result satisfying convergent validity indicates all items and variables can be considered acceptable and are reserved for the following research. Discriminant validity indicates the degree to

which a specific construct differs from the others and it can be assessed by comparing the square root of the AVE about a given factor and the correlations between the factors. Table 3 presents that each construct's square root of AVE is higher than correlations between this construct with others, manifesting that each construct share higher variance with items in its own factor. Therefore, the result of data analysis suggests satisfactory discriminant validity^[60].

Table 3 construct correlation matrix – Square root of AVE show on the diagonal

	PD	FE	SU	CP	CE	PC	PR	PI
P	0.7							
D	87							
F	0.3	0.8						
E	84	44						
S	0.1	0.3	0.9					
U	35	52	01					
C	0.1	-	-	0.8				
P	07	1	42	74				
C	0.0	0.2	0.0	-0	0.8			
E	9	33	82	-0	61			
P	0.0	0.2	0.4	0.0	0.0	0.9		
C	81	1	08	6	49	01		
P	-	-	-	0.0	-	-	0.9	
R	73	9	24	42	44	44	31	
P	0.0	0.0	-	0.3	0.3	0.1	-	0.9
I	73	89	58	56	81	39	0.1	17

1.1 The structural model

Structural analysis is conducted for specifying and estimating models of linear relationships between both observed and latent variables^[61]

A. Model fit

A set of indices of goodness of fit can be used to assess the consistency such as CFI, IFI, TLI and RESEA, etc. The results show a converged and reasonably fit with an excellent fit indices (with CFI 0.954 and RMSEA 0.06).In conclusion, the Reliability, convergent validity, discriminant validity and the model fit all suggest that the measured variables explain much of the variances of corresponding latent constructs, supporting the validity of the measures

Table 4 model fit summary

	CMIN/DF	2.498	CFI	0.954
	GFI	0.898	RFI	0.914

Table 5 path coefficients and hypothesis testing

Path	Hypothesis	Path Coefficient	P-Value	Results
Flow Experience→ Path Dependence	H1	0.384	***	Supported
Flow Experience→Perceived Cost Enjoyment	H2	0.233	***	Supported
Path Dependence→Perceived Cost Performance	H3	0.129	0.025	Supported

AGFI	0.871	IFI	0.954
NFI	0.926	RMSEA	0.06

B. Hypotheses testing

Figure 2 presents the model testing result base on Amos which can illustrate the original estimate value of each path and correlations between items and factors.

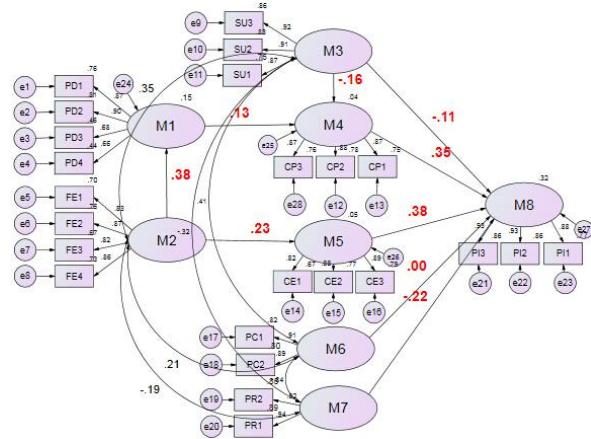
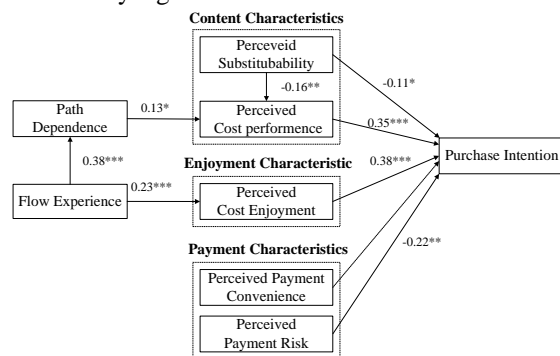


Figure 3 SEM analysis results of the model

Based on figure 2, figure 3 was presented by combine path coefficient and corresponding significance level. The solid line means the hypothesis is valid in this research while the dotted line indicates relation between two factors can't be prove based on this dataset. When hypothesis of two constructs was effective, larger path coefficient means stronger relation, minus sign manifest the relationship was negative and otherwise it was positive. Then, according to figure 2 and figure 3, the final path coefficients and hypothesis testing were showed in table 5. All the hypotheses except hypotheses 8 were statistically significant.



NOTE: *—p<0.05, **—p<0.01, ***<0.001

Figure 4 hypothesis testing

Perceived Substitutability→ Perceived Cost Performance	H4	-0.160	0.005	Supported
Perceived Substitutability→Purchase Intention	H5	-0.110	0.036	Supported
Perceived Cost Performance→Purchase Intention	H6	0.350	***	Supported
Perceived Cost Enjoyment→ Purchase Intention	H7	0.381	***	Supported
Perceived Payment Convenience→ Purchase Intention	H8	/	0.999	Not Supported
Perceived Payment Risk→ Purchase Intention	H9	-0/219	0.033	Supported

5. DISCUSSION

(1)Theoretical implications

The primary results in this research are as follows: flow experience positively affects users' dependence on mobile phone and perceived cost enjoyment; path dependence positively affects users' perceived cost performance; perceived substitutability negatively affects users' perceived cost performance and purchase intention; perceived cost performance and perceived cost enjoyment positively affect purchase intention; perceived payment risk negatively affect users' purchase intention. The influence of perceived payment convenience on purchase intention is not significant in this research.

These findings provided empirical support for theory about mobile service payment behavior, especially towards mobile reading with smartphone. Firstly, the results proved once again that flow experience exists in online reading; secondly, flow experience present a positively direct influence to path dependence and perceived cost enjoyment. Results reveal that more joyfulness acquired from reading process, higher hedonic value readers perceived. The confirmation of this hypothesis is consistent with the previous findings. For example, flow experience would produce positive emotion, results in affective and cognitive response. Finally, flow experience also shows positively indirect impact on consumers' purchase intention towards e-books which in accordance with the findings that flow experience can result in behavioral response.

In the present study, we proposed a direct positive correlation between path dependence and perceived cost performance along with an indirect correlation with purchase intention. In a consumption context, it is usual to develop a sense of inertia which refers to a specific consumption model in which consumers unconsciously patronize the same band of products based on past experience. Therefore, once users form inertia towards reading e-books with smartphone, they will consider mobile reading application more valuable and will read by this approach again. The confirmation of this hypothesis supports that path dependence would affect purchase intention through perceived cost performance.

Perceived cost performance and perceived cost enjoyment are two constructs to assess content and enjoyment characteristics of mobile reading which stand for perceived value in this study. Testing consumer behavior, they were proved to have positively effect on purchase intention. Some results

suggest that consumers are somehow economically rational and always chase maximum utility. Purchase decisions often occur after a comprehensive trade-off evaluation of the benefits and costs. The confirmation of the proposed correlation provide further empirical evidence for the theory that utilitarian and hedonic value can positively affect users' purchase intention This study is a further investigation of perceived value based on previous works which researched online purchase intention according to UTAUT framework, users' willingness for VIP subscription in social networking sites, consumers' purchase intention and behavior of organic food and purchase intention of online group-buying.

Perceived substitutability refers to the perceived possibility of acquiring more satisfactory service from an alternative service provider and we define it as how easily to find free version books from other approaches. Its negative effect on perceived cost performance and purchase intention were supported in this research. The results suggest that when other providers offer services with lower price, it became more attractive to consumer and which would always promote the purchase behavior. Mobile reading is a highly competitive industry, various free e-books can find on web while they aren't free on APP. Thus users' in this filed are generally sensitive to price and can easily switch to whichever provider is more cheap.

Perceived payment risk is proved to be a significant influential following perceived cost enjoyment and perceived cost performance. The results suggest that users can not totally trust in mobile payment environment in China, it is still possible that private information be divulged or be abused The finding is in accordance with previous works However, contrary to the findings of Schierz, Schilke and Wirtz, perceived payment convenience has not proved to have an significant effect on consumers' purchase intention Online payments risk includes systems dependent risk and transactional risk. With rapid development of mobile reading marketing in China, mobile payment technologies are so mature that consumers have no perceived systems dependent risk. On the other hand, most responders are young and have tremendous mobile payment experience, so they will not be affected by transactional risk.

In summary, paper has three main theoretical implications. Firstly, the paper focus on mobile reading purchase intention and expand research

framework by dividing influencing factors into three types, they are content characteristics, enjoyment characteristics and payment characteristics. Secondly, flow experience theory is applied into research model by defining the concept of perceived cost enjoyment. Finally, findings can provide some managerial insights for service providers to get deeper knowledge of users' demands and make their mobile reading service more profitable.

(2) Practical implications

The better understanding of constructs affecting consumers' payment intention towards contents on mobile reading APP would urge providers to improve their products and service to increase purchase rate. According to the questionnaires, 85% of the respondents have ever used smartphone to reading. Nevertheless, only 37% have ever paid for mobile reading service. The figure suggests that mobile reading adoption does not currently translate into purchase behavior. Therefore, the following empirical validation of our model is possibly provides some implications.

Firstly, the confirmation of perceived cost enjoyment and cost performance were proved as two key driving forces towards purchase intention, as well as flow experience and path dependence as two antecedents of them. So performance and enjoyment should be considered during product design, development and marketing. For example, in order to enhance readers' perceived cost enjoyment, the function of comments and interactions should be added to allow reader post real-time view and communicate with others which can improve users' sense of entertainment, participation and belonging. Additionally, service provider can establish different virtual communities base on readers' interests in which consumer can feel a sense control and identity. Furthermore, story line or endings can be changeable according to users' comments and feedback. Some plots can be reserved for readers to write. The adoption of content and offering relative reward based on quality of the work can encourage users' involvement.

Some other approaches can be employed to strengthen perceived cost performance. Some books can be recommended personally in view of users reading history ,habits, reading speed and residence time on certain pages. On the other hand, credits ,which can be used to pay for books or to exchange for favorable paper books, can be provided based on uses' reading, purchase, sign-in and recommendation behavior. Moreover, the free chapters, which cannot always be the first few chapters, should be adjusted to some exiting chapters.. In addition, perceived substitutability is proved to be a key factor to influence readers' purchase intention , which is determined by the Intellectual property rights reality of network literature in China. On the one hand, the contents of mobile reading applications

are seriously homogeneous; on the other hand, the commercial e-books on applications always have free versions on webpage. Under this condition, readers prefer seeking the free versions from other approaches to purchasing it from applications. Hence, providers should introduce more original literatures and enhance copyright protection consciousness. Furthermore, efforts should be made to improve interface design, resources presentation and cover design, which can make one application unique. Payment Environment is also important for consumers' purchasing process. Although the effect of perceived payment convenience on purchase intention was not significant in this research, we still regard it as one essential characteristic. So applications should provide trustworthy payment approach especially third-party platform, grantee the convenience and safety of payment activity.

(3) Limitations and future studies

While the present research was conducted with methodological rigor, there are several limitations need to be solved in the future. First, our data was collected based on the principle of convenience, and then the target group of respondents is too centralized. Therefore, it is necessary for continued research to choose the participants more well-proportioned in age, social state, education lever and geographic position; next, moderating effect result from demographic information and usage context were not considered in this research. But influence of some factors such as perceived value of different person on attitude and behavior are different So future research should examine how personality traits interact with perceived value to affect mobile reading purchase intention. In addition, because this research focus on the overall mobile reading industry, the dimension of trust was not employed. The future studies may pay attention to the trust towards various reading provider and platform; Moreover, this study employed a questionnaire oriented approach, certain degree of subjective exists towards the answer. Thus, ulterior effort should be paid to try to acquire objective data based on online reviews towards various reading APP, and then employ content and sentiment analysis approach to investigate users' mobile reading behavior.

6. CONCLUSION

Investigating the motivation for using and purchasing various types of information technologies has been an issue for research since the mid-1970s. In recent years, on one hand, the rapid development of mobile technology transferred part of research effort from information systems study under offline and traditional online environment to mobile field such as mobile reading, mobile value-added service, mobile payment, mobile games and mobile learning. On another hand, users' purchase behavior is critical for the development of relevant provider because this

income occupy very big part of total profit. In consequence, this study was conducted to propose and test the influential factors driving readers' intention to pay for the contents. The first dimension of the factor content characteristics for e-book can be viewed as a certain kind of product. The second dimension was enjoyment characteristics according to difference between reading system and other information system. The last dimension was proposed to describe external payment environment. Furthermore, quality value, enjoyment value and cost value were integrated to the conception of cost performance and cost enjoyment. Moreover, flow experience and path dependence were adopted as the antecedent variables of perceived cost performance and perceived cost enjoyment.

All hypotheses were supported except the correlation between perceived payment convenience and purchase intention, which may be caused by consumers' tremendous online payment experience which decrease the consumers' perceived risk and weaken the relationship between the perceived payment convenience and purchase intention. The results extend the current mobile reading behavior researches from adoption, usage and satisfaction to purchase intention, enriched theoretical system towards mobile payment service. In addition, the results show that it is reasonable and effective to study purchase behavior towards mobile service from cognitive, emotional and environment view, and thus represent a new direction for further research. At the end of this paper, several practical implications were provided based on the theoretical findings along with the limitation in this investigation and further studies.

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