Journal of Coastal Research	SI	83	839–845	Coconut Creek, Florida	2018

Adoption Research of the M-commerce Application Based on the Perspective of Supply Chain Management in Shipping Industry

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ABSTRACT

Gao, K. and Shao, X., 2018. Adoption research of the m-commerce application based on the perspective of supply chain management in shipping industry. *In*: Liu, Z.L. and Mi, C. (eds.), *Advances in Sustainable Port and Ocean Engineering. Journal of Coastal Research*, Special Issue No. 83, pp. 839–845. Coconut Creek (Florida), ISSN 0749-0208.

This paper built a structural equation model (SEM) of the adoption research of the M-commerce application based on perspective of supply chain. Get sample data through survey, use SEM to validate the fit test and research hypotheses. The results show that: (1) Behavioral intention directly affects the users' behavior, the affect coefficient is 0.516. Cost reduction, Time Saving, Effort Expectancy, Quality Improvement, Partner Trust, Technology Trust, Facilitating Conditions, Intention of the up-down indirectly affects the use behavior through the behavioral intention. (2) In all influence factors of behavioral intention, the cost reduction's effect intensity is maximum which is 0.483, the second is time saving. Time saving has a direct impact on the behavioral intention and the effect coefficient is 0.263, at the meantime, time saving has an indirect impact on the behavioral intention through the cost reduction and the effect coefficient is 0.483*0.321=0.155, so the effect coefficient of the time saving on the behavioral intention is 0.418. The followed are: Technology trust (0.397), quality improvement (0.382), intention of the up-down (0.387), partner trust (0.329), and facilitating condition (0.265). (3) Effort expectancy plays a negative influence on the behavioral intention and the effect coefficient is -0.173 which means that the more expect to effort, the lower the behavioral intention is, thereby reducing the use of M-commerce (Use behavior).

ADDITIONAL INDEX WORDS: *M-commerce, supply chain management, user, adoption; structural equation model.*

INTRODUCTION

With the rapid development of intelligent mobile terminal, the acceleration of the E-commerce, the improvement of the security of electronic payments of the mobile terminals and popularization and promotion of 3G/4G/WIFI, the M-commerce market trading is expanding (Qian, 2012; Wang *et al.*, 2012). From the data of china M-commerce market transaction size and growth rate, we can get the rapid development of Chinese mobile commerce. The Chinese M-commerce transaction amount is 11.68 billion RMB in 2011, it grow by 426.10% compared with 2010. The Chinese M-commerce transaction amount is 63.17 billion RMB in 2012, it grow by 440.80% compared with 2011. The M-commerce transaction amount is 167.4 billion RMB in 2013, the growth rate is 265.40%. It is expected that the Chinese M-commerce transaction amount will be double again by 2014 and will more than quadruple by 2016. The Chinese E-commerce transaction amount is 1850 billion RMB, including M-commerce transaction size which is 167.64 billion RMB accounting for 9.1%. It is expected that the proportion will be more than double, accounting for 19.9%.

The rapid development of the M-commerce has attracted more and more attention from the industry and academia. Yu (2013) considered that the M-commerce is not the evolution of the E-commerce, the M-commerce is not simply to move from PC to intelligent mobile terminal, the M-commerce is the revolution of the E-commerce. The mobile devices will introduce more innovation and generate new business models. The E-commerce will be eroded even subversive by the M-commerce, not to mention its impact on the traditional line retail. Industry has usurped the mobile commerce highlands. At the same time, the application of the mobile commerce business model and user acceptance is particularly important (Wang, 2008). This article will be on the basis of past scholars and industry-related research and practice, analysis the mobile commerce user acceptance behavior based on the perspective of supply chain management in shipping industry.

THE CONCEPTION AND DEFINITION OF M-COMMERCE

In recent years, with the development and adoption of the third and fourth generation (3G/4G) mobile communications technology, mobile business model as a new business service model grows up

DOI: 10.2112/SI83-138.1 received 2 November 2017; accepted in revision 5 February 2018.
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on a global scale. Mobile commerce plays an enormous impact to our production and living, we are moving slowly from the era of E-commerce into the era of M-commerce services.

Mobile commerce is now becoming the hot and focus of the research scholars and foreign experts, but also the hot and focus of the social and economic. To today, the definition of mobile commerce has not yet formed a unified concepts and definitions at home and abroad, different experts and scholars on mobile commerce has different interpretation (Ling, Xia, and Zeng, 2008; Lu, 2006; Lu, Chen, and Dong, 2008; Yang, Lu, and Liu, 2009; Wang, 2008; Zhou and Lu, 2010).

Zhou, Lu, and Zhang (2009) described the kind of mobile business services, they think a typical mobile commerce services is such as WAP access, mobile communication, mobile email, mobile games, mobile bookings and information search. Ling, Xia, and Zeng (2008) believed that mobile commerce is the information, service or goods exchange process electronic transaction or information exchange process through the mobile devices and mobile network (wireless network or public switched network). Lu (2006) considered the mobile business can be understood as goods, services, information, knowledge exchange trading business system through the use of wireless mobile devices and wireless communication technology. The unique nature of mobile communication devices and wireless technology makes the big difference between the mobile commerce transaction model and the traditional e-commerce transaction model. The "mobile" characteristics of the mobile commerce have brought more business opportunities than the E-commerce. How to use the latest information technology to improve operation performance, reduce operating costs in order to improve overall competitiveness has become an important issue and challenge facing modern business. Lu, Chen, and Dong (2008) believed that the mobile commerce means a variety of commercial information exchange and various business activities relying on mobile communications network, mobile phone, PDA, notebook computers and other mobile communication terminal equipment (Yang, Lu, and Liu, 2009). Ren (2007) believed that the mobile commerce is for data transmission via mobile communications network or wireless network, and using a mobile phone, PDA and other mobile terminal business model to carry out a variety of business activities. Mobile commerce is a subset of E-commerce and is an E-commerce system through mobile phones, PDA (personal digital assistants), pagers and other mobile communications devices and wireless network technology (Wang, 2008). Lehman Brothers Company defined the mobile commerce as the use of mobile handheld terminal to achieve communication, notification, transaction and entertainment by linking public and private networks data and text. Durlacher company believed that mobile commerce refers to any commercial financial transactions via mobile networks. Forrester company believed that mobile commerce is a use of mobile handheld devices to interact and communicate through the internet online link. Mobile commerce is defined by Mobilocity company to provide personalized, convenient and local-based services to customers, employees and partners by the wireless technology.

In summary, although the definition of mobile commerce is not yet fully unified, but the basic content and the basic meaning of mobile commerce is the same, that all need to move the mobile device terminals and wireless network technology, need to engage in business activities. Therefore, this article will define the mobile commerce is an e-commerce system and model to combine a variety of information exchange and business activities via mobile devices and wireless network technology.

LITERATURES OF THE ACCEPTANCE AND CONTINUED USAGE BEHAVIOR OF M-COMMERCE USERS

Many experts and scholars did lots of useful exploration and research on the acceptance behavior of the M-commerce users (Guo, Luo, and Zhu, 2013; Li and Li, 2009; Ling, Xia, and Zeng, 2008; Min, Ji, and Meng, 2008; Yang, Lu, and Liu, 2009; Zhou and Lu, 2010; Zhou, Lu, and Zhang, 2009).

Zhou (2007) did a study on acceptance behavior of M-commerce user based on perceived value, the paper examined the impact of perceived value as a second-order factor on users' acceptance behavior, which includes four dimensions: Financial value, quality value, emotional value and social value, and the results shoe that perceived value strongly affects trust and satisfaction, further determining users' behavioral intention. Among the four dimensions, social value has a relatively large effect and the financial value makes the weaker effect. Different to the traditional context of enterprise technology acceptance, M-commerce users

Table 1. *Literature summarized of the define content on mobile commerce.*

Scholars and Experts	Content Areas of the Mobile Commerce			
	Mobile Devices	Mobile Network	Information Exchange	Business Activities
Ling Hong, 2008	√	√	√	√
Lu Tingjie, 2006	√	√		√
Lu Yaobing, 2008	√	√	√	√
Yang Guangming, 2009	√	√	√	√
Ren Hongyan, 2007	√	√	√	√
Wang Yinglo, 2008	√	√		√
Wei Jie, 2006	√	√		√
Lehman Brothers	√	√	√	√
Durlacher		√		√
Forrester	√	√	√	
Mobilocity		√	√	

need to bear the using cost by themselves, potential M-commerce users will balance benefits and the costs of usage prior to decide whether or not to accept M-commerce products or services, in addition, the user trust is another important factor affecting their acceptance behavior, Zhou, Lu, and Zhang (2009) examines factors influencing user perceived value (ubiquitous connection and contextual offering)and trust (perceived fee, security risk and privacy risk) from both perspectives of benefit and cost, and the results show that the ubiquitous connections, perceived fee and security risk significantly influence perceived value, while the contextual offering and security risk significantly influence the user trust. By means of mobile communication technology such as location-based services(LBS), mobile service providers can collect user's personal information more easily, which has aroused users' serious concern with their privacy. This will affect users' acceptance behavior, so Zhou and Lu (2010) examined the components of privacy concern and its effect on users' acceptance behavior under the mobile commerce environment, he conducted data analysis with SEM and found out that privacy concern as a second-order factor consists of four dimensions: Information collection, improper access, information error and secondary usage. The results show that privacy concern significantly affects user risk perception and trust, and through them indirectly affected usage behavior.

Ren (2007) think the mobile commerce, as a new kind of commerce model, will necessarily become the important impulse to the future economic growth, but the mobile commerce is still currently in its infancy in china. Ren (2007) analyzed the affecting factors of consumers' using behavior. Zhu (2007) presented a model how the users interact with mobile technologies from the perspectives of the usage of mobile APP in business environments. In her model, it presents three determinants (pervious experience, colleague support, organizational support) of end-user mobile technology / application self-efficacy, which then influences individual outcome expectations (performance, image and status) and brings different affective respinses to mobile technology usage, and then good perceived performance outcome expectations and joyful affective responses can improve the usage of mobile application in businesses.

Deng and Lu (2008) think the mobile commerce is the development of the E-commerce, and use the value focused thinking to set up the mobile commerce trust model which includes consumers' trust, user characteristics, consumer behavior intentions, customer satisfaction and loyalty, corporate performance, perceived interactivity, perceived mobile device technology, the perception of mobile communication technology, businesses perception, perception of product or service and so on. Li and Li (2008) discuss the success factors of B2C mobile commerce based on consumer acceptance theory and consumer acceptance model of mobile commerce, meanwhile, some strategies are provided for mobile vendors' practice. Ling, Xia, and Zeng (2008) set up an adoption model of content delivery mode MC application based on literature review and interview with MC regular users, and the results show that TAM is suitable for explaining the user acceptance behavior of content delivery mode mobile commerce. Min, Ji, and Meng (2008) analyzed the factors affecting the trust, the result show that institutional trust, mobile suppliers trust and technology trust are the main factors affect trust, which the institutional trust plays a major role at this stage.

Yang, Lu, and Liu (2009) selected 5 factors(business reputation, structural protection, consumers trust trend, the usefulness of mobile commerce and other related groups) to analyze the structural model which the consumer initial trust mobile commerce, and the results show that consumers trust trend, the usefulness of mobile commerce and other related groups significantly influence the initial trust, meanwhile, the usefulness of mobile commerce and other related groups have a positive significant effect on the motivation of adoption of mobile commerce. Lin (2011) built a three-stage theoretical model of consumer trust evolution in the context of mobile banking' and mainly analyzed the formation mechanisms of consumer decision-making behavior in the pre-usage phase, the feedback mechanisms of usage behavior in the usage phase and the evaluations mechanisms in the post- usage phase. Through a laboratory experiment which collected 163 valid longitudinal questionnaires, he used the SPSS and the PLS-Graph software to conduct statistical analysis, the empirical results indicate that trust no only directly affects usage behavior significantly, but also had significantly indirect influence on it through other variables. Usage behavior had significant positive feedback on the cognitive or psychological factors, uses' evaluations had significantly positive impact on satisfaction, satisfaction prompts the level of user trust in turn which further had important effect on the future usage behavior, and ultimately, the evolution of trust forms a round dynamic feedback process, which explain the law of the trust evolution. Luo (2013) deals with the factors influencing mobile commerce users' trust and its route establishment. Three factors such as personal disposition to trust, structural assurance, and perceived system quality are mainly examined in a model of consumers' trust in m-commerce, in the aspects of individuals, businesses, technology, and environment. Empirical study based on SEM with 496 valid questionnaires indicated that: (1) trust belief has a significant effect on the trust intention; (2) it is system quality that has the greatest effect on the trust belief, next comes the effect of personal disposition, and gender also has a positive effect on trust belief; (3) structural guarantee significant influences trust intention, but it has no significant effect on trust and faith;(4) personal disposition has a significant and positive effect on trust belief and trust intention. Guo' study reveals that there are two paths to establishing m-commerce trust: Swift trust and initial trust, which can be established rapidly or gradually through interaction with businesses. Perceived good system quality has a significant impact on building consumer's initial trust, while structural guarantee and personal disposition have a significant effect on swift trust.

There is not much research on mobile commerce users' continued usage behavior, but there is still some useful exploration and research (Zhang and Wu, 2005; Zhou, Lu, and Zhang, 2010). Zhou, Lu, and Zhang (2010) examined the factors affecting mobile commerce users' post-adoption behavior. Enables include trust and satisfaction, and inhibitors include switching barrier. He analyzed the collected data with LISREL, the results show that these three factors have significant effect on users' continuance usage. Service quality and perceived value strongly affect trust and satisfaction, whereas switching cost and satisfaction determine switching barrier. Zhang and Wu (2005) proposed an expanded ECM, investigated the continued usage intention of mobile commerce using the expanded ECM, and used the structural equation model to verify the model and the hypotheses proposed in the model, the results show that the users' satisfaction of mobile commerce

has significantly influence on their continued usage intention of M-commerce and moreover, conformation has indirect impact on their continued usage intention of m-commerce.

There are five theories and tools about the adoption of M-commerce: Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT) and Consumer Acceptance and use of Technology (UTAUT 2).

Summary above, we can get that the past study about the acceptance behavior of the mobile commerce focus on the trust, the research method always is the SEM, and the research object user is generally analyzed as a separate entity. In this paper we will analyze the users as an integral part of the supply chain, this study will analyze the influence of the upstream and downstream behavior affecting on the users(as the Figure 1), the method is relatively mature and widely used SEM, through questionnaires and field interview and other ways to obtain the required data.

THEORETICAL MODEL ABOUT M-COMMERCE USER ACCEPTANCE BASED ON PERSPECTIVE OF SUPPLY CHAIN

Based on the above analysis, previous studies on the mobile commerce users' accept behavior focused on the five research theory and its applications, such as Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT) and Consumer Acceptance and use of Technology (UTAUT 2). This article will be on the basis of UTAUT 2, combined with the actual situation, and build the user acceptance behavior theoretical model based on the perspective of supply chain. In the structural model, we will consider the factors as following: Use behavior, behavioral intention, cost reduction, time saving, effort expectancy, quality improvement, partner trust, technology trust, facilitating conditions and intention of the up-down.

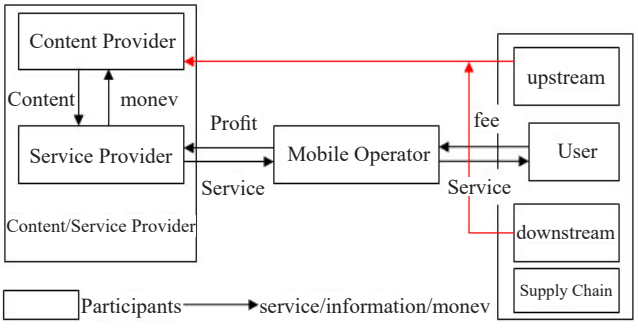

Figure 1. Upstream and downstream are the content providers.

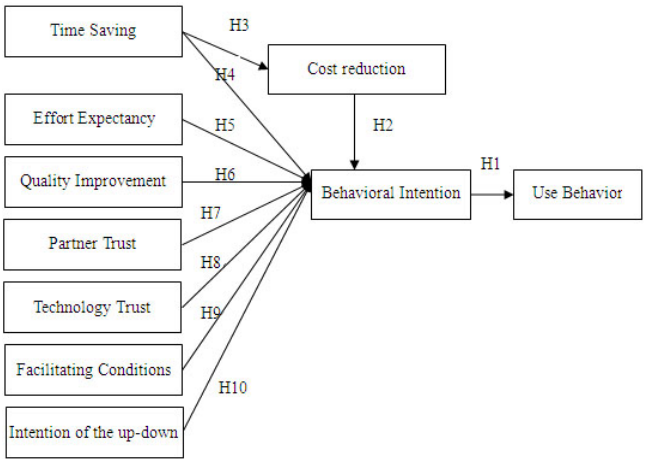

Figure 2. The m-commerce user acceptance behavior theoretical model based on the perspective of supply chain.

Figure 2 is the m-commerce user acceptance behavior theoretical model based on the perspective of supply chain and it is only a preliminary model which should be confirmed and corrected by late model checking constantly. The use behavior, behavioral intention, cost reduction, time saving, effort expectancy, quality improvement, partner trust, technology trust, facilitating conditions and intention of up-down are latent variables, so they can not be directly observed and only be evaluated by relevant indicators. The arrow indicates the relationship between the variables, and the arrow pointing indicates the presence of a positive or negative factor correlation or causal relationship to another factor. We will use SEM to test these relationships which are established by the arrow. Figure 2 illustrates the mutual influence relationship between the elements of each variable. In this paper, we do studied hypotheses H1-H10

Table 2. *Research hypotheses about the m-commerce user acceptance based on the perspective of supply chain.*

Hypotheses No.	Hypotheses Content	Expected Direction
H1	Behavior intention improves the use behavior	positive
H2	Cost reduction improves the behavior intention	positive
H3	Time saving improves the cost saving	positive
H4	Time saving improves the behavior intention	positive
H5	Effort expectance reduces the behavior intention	negative
H6	Quality improvement improves the behavior intention	positive
H7	Partner trust improves the behavior intention	positive
H8	Technology trust improves the behavior intention	positive
H9	Facilitating condition improves the behavior intention	positive
H10	Intention of up-downstream improves the behavior intention	positive

to present the relationships between the variable, the details are shown in Table 2.

From the Table 2, we can see that there are 10 research hypotheses (9 positive and 1 negative). New we described the 10 research hypotheses specifically.

H1: Behavior intention improves the use behavior. Behavior intention of accepting mobile commerce promotes the use behavior, the more intense behavior intention, the higher probability of acceptance behavior, so the behavior intention plays a positive effect on the use behavior.

H2: Cost reduction improves the behavior intention. If the mobile commerce can save costs to some extent, the user acceptance behavior intention of mobile commerce will be generated, and the intensity of behavior intention is proportional relationship with the degree of the cost reduction.

H3: Time saving improves the cost saving. Time is money, mobile commerce is without restrictions of time and place, thus can save time to a certain extent. Time saving means cost reduction, the extent of time saving plays positive effect on the extent of cost reduction.

H4: Time saving improves the behavior intention. If the mobile commerce can cut down the time, the user acceptance behavior intention of the mobile commerce will be generated, and the intensity of behavior intention is proportional relationship with the degree of the time saving.

H5: Effort expectance reduces the behavior intention. Effort expectance play a negative influence on the behavior intention, if the people need to cost lots of time and energy, the people's behavior intention will be in low level.

H6: Quality improvement improves the behavior intention. Mobile commerce can improve the quality of the product and service, and the quality improvement of the product and service will attract more users' acceptance behavior.

H7: Partner trust improves the behavior intention. Partner trust means the trust between the mobile commerce supply chain nodes, the higher level of the partner trust is, the higher user behavior intention is. Partner trust plays a positively influence on the behavior intention.

H8: Technology trust improves the behavior intention. The technical level and technology trust of the mobile commerce platform affect user acceptance behavior intention of the mobile commerce. The higher level of the technical level and technology trust, the more intense of the user acceptance behavior intention of mobile commerce, so the technology trust plays a positively influence on behavior intention.

H9: Facilitating condition improves the behavior intention. Facilitating condition affects the user behavior intention, the higher level of the facilitating, the higher intense user acceptance behavior intention is. Facilitating condition plays a positively influence on the behavior intention.

H10: Intention of up-downstream improves the behavior intention. The intention of up-downstream means the opinion of the up-downstream about the mobile commerce. It plays a directly and positively influence on the user acceptance behavior intention of mobile commerce. The better the attitude about the m-commerce from the up-downstream, the higher intense the user acceptance behavior intention of m-commerce is.

EMPIRICAL STUDY ABOUT M-COMMERCE USER ACCEPTANCE BASED ON PERSPECTIVE OF SUPPLY CHAIN

This article designs the questionnaire and organizes students and teachers to do survey through corporate field survey, mailed survey, telephone survey and network survey (by QQ or E-mail). The samples are from five counties in Jiujiang city Jiangxi province in china which are the Jiujiang national export processing zones, Hukou golden bay industrial park, Yongxiu spark industrial park. At last we get 78 effective samples from 86 enterprises, then use the sample data to do empirical analysis.

Table 3. *Fit analysis of the SEM.*

Fit Index	Standards	Actual Value	Result
	Absolute fit index		
χ^2 test	P<0.05	287.19 (P=0.000)	ok
GFI	>0.9 (good fit) 0.8-0.89 (reasonable fit)	0.894	ok
RMR	<0.05	0.021	ok
RMSEA	≦0.05 (very good fit) 0.05-0.08 (good fit) 0.08-0.10 (moderate fit) >0.10 (poor fit)	0.069	moderate fit
	Relative fit index		
NFI	>0.9	0.912	ok
IFI	>0.9	0.928	ok
CFI	>0.9	0.983	ok
	Simple fit index		
PNFI	>0.50	0.746	ok
AIC	Theoretical model values <Independent model values and Saturation model values	219.78 (Theoretical model values) <412.61(Saturation model values) <843.27(Independent model values)	ok

Source: *This study calculated.*

Fit analysis of the Model

The purpose of the SEM over model fit analysis is to evaluate whether the theoretical model can explain the actual observed data, or whether the fit is good between the theoretical models and observational data. There are many different views of various scholars about the fit indicators to explain the SEM overall pattern fit. This paper, we choose the views from Bagozzi and Yi (1988), Qiu (2004) and Huang (2004) ,the fit indicators include chi-square value, goodness of fit index (GFI), root mean square residual (RMR), root mean square error of approximation (RMSEA), standardized goodness of fit index (NFI), added goodness of fit index (IFI),compare the goodness of fit index(CFI), the simple goodness of fit index specification (PNFI) and Akaike information criterion(AIC). The fit standards value and actual value of these indicators are shown in Table 3.

From the Table 3, we can get that the structural equation model and observations in this study is with good moderately and there is a better goodness of fit.

Validation Results and Analysis of the Model Hypotheses

The coefficients of each path between the variables in the SEM are shown in Table 4 and Figure 2. In the paths of Table 4 and Figure 3, digital above the arrow represents the path coefficients between the variable, the value inside the brackets is the T-test value.

Table 4. *Path coefficients and validation results of the hypotheses in the SEM.*

NO.	Path	Estimate	T-test	Expected Direction	Result
H1	Behavior intention—use behavior	0.516	3.615	positive	Verified
H2	Cost reduction—behavior intention	0.483	2.341	positive	Verified
H3	Time saving—cost saving	0.321	2.186	positive	Verified
H4	Time saving—behavior intention	0.263	3.341	positive	Verified
H5	Effort expectance— behavior intention	-0.173	3.987	Negative	Verified
H6	Quality improvement —behavior intention	0.382	2.054	positive	Verified
H7	Partner trust — behavior intention	0.329	1.983	positive	Verified
H8	Technology trust—behavior intention	0.397	3.582	positive	Verified
H9	Facilitating condition—behavior intention	0.265	2.147	positive	Verified
H10	Intention of up-downstream—behavior intention	0.378	3.582	positive	Verified

From the Table 4 and Figure 3, we can get that in the 10 hypotheses, we can get that the 10 research hypotheses path coefficient value are all significant and verified.

Note: Figures in brackets represent the T-test value, dashed line shows that the relationship between the variables which did not pass the T-test.

CONCLUSIONS AND IMPLICATIONS

This paper sets up SEM and uses the survey data to do empirical analysis, the result shows that there is a good fit between the SEM and the observation data. We also can get the path coefficients between the variables from the results in Table 4 and Figure 3, we can get some following conclusions:

(1) Behavioral intention directly affects the users' behavior, the affect coefficient is 0.516. Cost reduction, Time Saving, Effort Expectancy, Quality Improvement, Partner Trust, Technology Trust, Facilitating Conditions, Intention of the up-down indirectly affects the use behavior through the behavioral intention.

(2) In all influence factors of behavioral intention, the cost reduction's effect intensity is maximum which is 0.483, the second is time saving. Time saving has a direct impact on the behavioral intention and the effect coefficient is 0.263, at the meantime, time saving has an indirect impact on the behavioral intention through the cost reduction and the effect coefficient is 0.483*0.321=0.155, so the effect coefficient of the time saving on the behavioral intention is 0.418. The followed are: Technology trust (0.397), quality improvement (0.382), intention of the up-down (0.387), partner trust (0.329), and facilitating condition (0.265).

(3) Effort expectancy plays a negative influence on the behavioral intention and the effect coefficient is -0.173 which means that the more expect to effort, the lower the behavioral intention is, thereby reducing the use of M-commerce (Use behavior).

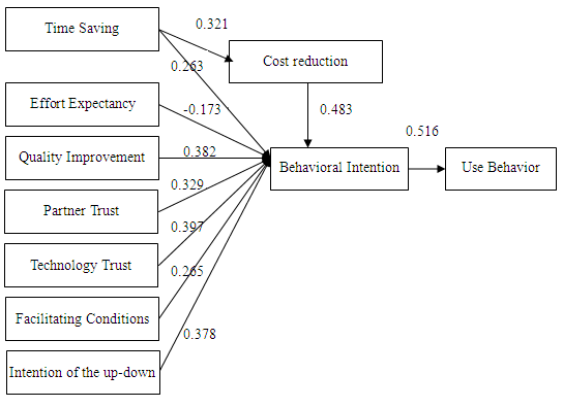

Figure 3. Results and path coefficients of the SEM.

ACKNOWLEDGEMENTS

This work is supported by National Natural Science Foundation of China (Grant No:71462020, 71662019), Social Science Fund of Jiangxi Province(Grant No:17GL21), Humanities and Social Science Fund of Jiangxi Province(Grant No 1576).

LITERATURE CITED

Cao, C.; Tan, Z., and Liu, D., 2003. Analysis on key factors of successful mobile commerce practice. *Logistic Technology*, 9, 13-15.

Davis, F.D., 1993. User acceptance of information technology: System characteristics, user perceptions, and behavioral impacts. *International Journal of Man-Machine Studies*, 38(3), 475-487.

Guo, L.; Luo, X., and Zhu, M., 2013. Factors influencing mobile commerce consumers' trust and its route establishment. *Systems Engineering*, 7, 121-127.

Lee, M.C., 2009. Predicting and explaining the adoption of online trading: An empirical study in Taiwan. *Decision Support Systems*, 47(2), 133-142.

Li, Z. and Li, M., 2009. Research on success factors of B2C commerce based on consumer acceptance theory. *Commerce Research*, 8, 199-201.

Lin, J. and Lu, Y., 2011. Dynamic evolution of consumer trust in the mobile commerce environment. *Journal of Management Science*, 12, 90-103.

Lin, J.; Lu, Y., and Zhang, S., 2010. Trust transfer from online to mobile environment: An empirical study. *Nankai Business Review*, 13(3), 80-89.

Ling, H.; Xia, L., and Zeng, F., 2008. Research on acceptance model of content delivery mode mobile commerce. *Shanghai Management Science*, 12, 184-185.

Lu, Y., 2006. An analysis and prospect of the development trend of the mobile trade in china. *Journal of BUPT (Social Science Edition)*, 10, 2-8.

Lu, Y.; Chen, Z., and Dong, Y., 2008. The analysis and case study on mobile business supply chain in China. *R&D Management*, 2, 123-128.

Min, Q.; Ji, S., and Meng, D., 2008. Trust factors research on mobile commerce acceptance. *Management World*, 12, 184-185.

Qian, M.A., 2012. 'Reasonable period of time' in the WTO dispute settlement system. *Journal of International Economic Law*, 15(1), 257-285.

Venkatesh,V.; Morris, M.G.; Davis, G.B., and Davis, F.D., 2003. User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 415-429.

Venkatesh, V.; Thong, J.Y.L., and Xu, X., 2012. Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *Social Science Electronic Publishing*, 36(1), 157-178.

Wang, Y., 2008. Review an prospect of research and application of mobile commerce in China. *China Journal of Information Systems*, 2, 1-9.

Wang, Y.; Yang, H.; Li, L.; Wang, H.; Xia, X., and Zhang, C., 2012. Biomarkers of chromosomal damage in peripheral blood lymphocytes induced by polycyclic aromatic hydrocarbons: A meta-analysis. *International Archives of Occupational and Environmental Health*, 85(1), 13-25.

Yang, G.; Lu, Y., and Liu, W., 2009. An empirical research on factors influencing consumers' in initial trust in mobile commerce. *Journal of Intelligence*, 7, 175-179.

Zhang, X. and Wu, Y., 2005. Research on the business mode land operating mechanism of m-commerce value net. *Soft Science*, 5, 34-37.

Zhou, C. and Sheng, F., 2003. Mode of mobile business and the suggestion for development. *Shanghai Management Science*, 5, 42-44.

Zhou, T.; Lu, Y., and Zhang, J., 2009. A study on acceptance behavior of mobile commerce user based on perceived value and trust. *Chinese Journal of Management*, 10, 1407-1412.

Zhou, T. and Lu, Y., 2010. The impact of privacy concern on mobile commerce users' adoption behavior. *Chinese Journal of Management*, 7, 1046-1051.