

An Exploratory Study on Lifestyles and the Adoption of Mobile Services in China

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ABSTRACT

This study examines the relationship between the lifestyles of Chinese consumers and the adoption of mobile services. Based on a sample from 313 respondents from the biggest city in central China, the results show that consumers with different lifestyles have different preferences over a number of identified mobile services. It is found that there are some lifestyle factors, such as the investment consciousness and the financial contentment consciousness, having significant negative impact on the adoption of office/learning tools on mobile devices. Furthermore, Chinese consumers are clustered into four lifestyle segments by two dimensions: the quality-awareness fashionable dimension and the economical dimension. The findings demonstrate that the quality-awareness fashionable dimension has stronger impact than the economical dimension toward the adoption of all the five types of mobile services.

Categories and Subject Descriptors

H.1 Models and Principles

General Terms

Experimentation, Human Factors

Keywords

Lifestyle, Mobile Services, the Adoption of Mobile Services

1. INTRODUCTION

The rapid growth of mobile communication and usage of mobile devices in recent years has provided a great opportunity for creating a variety of mobile services. The advanced mobile devices enable users to try out new mobile services, but the adoption of mobile services often do not progress as expected [1]. Most research about the adoption of mobile services was mainly based on TAM models (e.g., [2-5] [6]). It is believed that current research has some limitations in explaining how

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adopters relate emotionally to mobile services and their feelings attached to using them socially. According to our previous studies [7], evidences have been found that non-technical factors (e.g., culture) do impact consumers' adoption of mobile services. Therefore, we would like further explore mobile services diffusion from non-technical perspective, such as lifestyles, in the Chinese context in this study.

As lifestyle factors have a fundamental effect on how users perceive mobile services, the appropriateness of a mobile service for a lifestyle segment may not be appropriate for other lifestyle segments. To our best knowledge, despite the importance of these lifestyle factors, little research has been performed on the effect of various lifestyle factors on mobile services diffusion, particularly in the Chinese context. As the mobile device is more and more popular on the Chinese market, it has lost luxury status but has become a fashion accessory in some regions in China. The objective of this research is to examine the adoption of various mobile services from the view of lifestyles in the Chinese context. In order to address this, we carried out an empirical study with university students and young professionals in the biggest city in central China. The research question in this research is: How do different lifestyle factors impact the adoption of various mobile services in China?

The remainder of this paper is organized as follows. In Section 2, we review related literature. Section 3 presents the research method. We analyze the data collected in this study in Section 4. Section 5 concludes this research and points out some directions for future research.

2. LITERATURE REVIEW

This section presents some research relevant to this research.

2.1 Lifestyle

The concept of lifestyle originates from market research and consumer behavior [8] [9]. Lifestyles can be defined as the consistent patterns that people follow in their lives, including how they spend their time and money, and they are identified through people's activities, interests and opinions of themselves and the world around them [10]. Zablocki and Kanter [11] defined lifestyles as 'a collectivity' based on shared preferences or tastes, where the people share a lifestyle as a collectivity that otherwise lacks social and cultural identity. Peter and Olson [12] define lifestyle as 'the manner in which people conduct their lives, including their activities, interests and opinions'.

The methods to measure lifestyle and the relationship between lifestyle and consumer behaviour have been developed quickly. The most widely used has been the AIO (Activities, Interests and Opinions) rating system which measures lifestyle by using scales from activities, interests and opinions aspects [13]. With regards to the Chinese context, Wu [14] developed China-VALS based on interviews with 70684 consumers in 30 cities in China.

Considering this research is carried out in China, China-VALS, which is created by Wu [14], is a good choice to measure Chinese consumers' lifestyles. China-VALS model was developed based on AIO and VALS model mentioned above, and make a further exploration on Chinese consumers' grouping, values, and social stratification. China-VALS model includes 33 statements on lifestyles with a total of 11 lifestyle consciousnesses (see Table 1).

Table 1. Identified 11 Lifestyle Consciousnesses in China

L1: Novelty consciousness	L5: Quality consciousness	L9: Western lifestyle consciousness
L2: Hedonistic shopping consciousness	L6: Price consciousness	L10: Investment consciousness
L3: Fashion consciousness	L7: Advice seeking consciousness	L11: Financial Contentment consciousness
L4: Habitual consumption consciousness	L8: Impulsiveness consciousness	

2.2 Lifestyles and the Adoption of Mobile Services

In the field of marketing, lifestyle is widely used to study the different behavior of various consumer groups. Anderson and Golden [15] further suggested that lifestyle is correlated to how people live, including interests, values, how to distribute time and consumption. Therefore, by knowing the lifestyle of potential consumers, it is easy for a company to better understand the consumers' consumption patterns and buying behavior, which in turn helps the company to promote its services or products to the consumers [16]. Thus, it is worth to employ the theory of lifestyles to explore the adoption of different types of mobile services.

An examination of the current literature reveals that few studies have addressed the effect of lifestyles on the adoption of mobile information services. In the previous research, Reuver and Bouwman [17] found that lifestyles is of help to explain consumers' behaviour when it comes to the adoption of mobile services. Therefore, an exploratory study to investigate the impact of lifestyles on mobile services diffusion is necessary.

3. RESEARCH METHODS

The study aimed to explore the influence of consumer lifestyles on the adoption of different types of mobile services. Thus, we

firstly adopted semi-controlled depth interview with postgraduates majoring in E-business in a university and experts in mobile commerce to better understand the types of mobile services in China. Then, we designed a survey instrument intended to measure the influence of lifestyles on different types of mobile services. Lastly, data was collected in terms of the survey from the biggest city in central China.

3.1 Survey Instrument

The survey consists three parts (see the link: <http://www.idi.ntnu.no/~shanggao/lifestyle>). A five-point Likert scale was used to examine participants' responses to all items in part2 and part 3 of the survey. Before the survey administration, pre-test of the questionnaire with a small group of respondents was conducted, and the results were satisfactory.

- The first part is to know participants' personal background.
- The second part is intended to measure consumers' lifestyle. The validated 11 lifestyle factors and 33 measurement items from China-Vals [14] was used as the foundation to create survey items for this part. We made necessary adjustments to fit the scenario of this study.
- The third part was designed to measure consumers' adoption of different mobile services. The summarized types of mobile services are shown in Table 2.

Table 2. Types of Mobile Services

Communication services	M1	Instant messaging tools (e.g., QQ, MSN, WeiXing, etc.)
	M2	Social network services (e.g., Micro-Blogs, renren, etc.)
Information search services	M3	Search engine query
	M4	Read news through a browser
Transaction services	M5	Mobile trading services (e.g., online buying, mobile payment)
	M6	Financial services (e.g., stock software, accounting, etc.)
Learning/office tools services	M7	Office software (e.g., WORD, PDF, PPT, E-Mail, etc.)
	M8	Learning tools (e.g., dictionaries, formula conversion, etc.)
Entertainment services	M9	Online entertainment services (e.g., online games, video, etc.)
	M10	Download games, music and other mobile services

3.2 Sample

The data for this study were collected through self-administered questionnaires in the biggest city in central China. The candidates were selected based on the following criteria: a). young professionals; b). well educated students (e.g., undergraduate students, postgraduate students); c). frequent internet users. The survey was distributed in terms of paper based questionnaires individually from October 15 to November 15, 2011. As a result, 320 completed questionnaires were collected, among which 313 were valid questionnaires (i.e., valid respondent rate 97.8%). According to the data analysis, the value of Cronbach's Alpha of all items was above 0.709, which means that the reliability of the scales is quite good.

4. DATA ANALYSIS

In the section, we present some results from the survey.

4.1 Analysis on Lifestyles and different Types of Mobile Services

ANOVA analysis was employed to explore the relationship between 11 lifestyle factors identified in Table 1 and 10 kinds of mobile services mentioned in Table 2. This analysis enables us to study how different lifestyle factors affect the adoption of different types of mobile services. Some results were summarized as follows.

The novelty consciousness can significantly affect people's adoption of mobile communication and information services. People with high new life consciousness are more likely to pursue new things and care about the changes of surrounding environment. Therefore, the mobile phone becomes a portable tool for them to search new information.

The hedonistic shopping consciousness and the fashion consciousness would significantly affect the adoption of all types of mobile services. Groups with high hedonistic shopping consciousness usually get a variety of information initiatively, while people with high fashion consciousness have a strong interest in any new thing and they are keen to use all kinds of mobile services.

The impulsiveness consciousness has the most significant influence on the adoption of mature and widely used mobile services. Groups with high impulsiveness consciousness prefer to use mature mobile services (e.g., information search, social network, news, etc.). It is hard for groups with high impulsiveness consciousness to gain strong loyalty to a specific tool; they are more concerned about convenience and could easily change their preferences without others.

However, not all lifestyle factors are positively related to the adoption of mobile services. By comparing the high score groups with low score groups of each lifestyle factor, the results indicate that the investment consciousness and the financial contentment consciousness have significantly negative impact on consumers' adoption of office and learning tools. As to the former, people with high investment consciousness may be in favor of conservative financial management. As a result, they would like to use traditional tool rather than new mobile tools. While for the people with high financial contentment consciousness, they care more about their career development.

Therefore, they would like to spend more time on their work rather than on learning new things.

4.2 Segmentations of Respondents

In this section, we tend to segment respondents into clusters of consumers with different lifestyles. The segmentation was based on two dimensions: a). quality-awareness fashionable dimension, mainly including seven lifestyle factors: novelty consciousness, hedonistic shopping consciousness, fashion consciousness, habitual consumption consciousness, high-quality consciousness, advice seeking consciousness, impulsiveness consciousness; b). economical dimension, mainly including four lifestyle factors: price consciousness, western lifestyle consciousness, investment consciousness, financial contentment consciousness.

The cluster analysis resulted in four lifestyle clusters. The four clusters are summarized as follows.

- Cluster 1 (Strong quality-awareness fashionable +Strong economical consumers). This type of consumer has high novelty consciousness, high habitual consumption consciousness. In general, they would like to experience and accept new stuff. They also have high western lifestyle consciousness. They would like to spend more time with their family and relatives. It is likely that their core value is money. It appears that they have the highest social economic status and wealth.
- Cluster 2 (Strong quality-awareness fashionable +Weak economical consumers). This cluster generally has high quality consciousness, and high impulsiveness consciousness. They are independent and enthusiastic about advanced mobile services. It appears that they paid much attention to some advanced mobile services. They score low on investment consciousness. They are likely to take risks when it comes to meeting new challenges or things.
- Cluster 3 (Weak quality-awareness fashionable +Strong economical consumers). They do not want to change their current behavior and lifestyle. It seems that this group is not interested in pursuing a new lifestyle, but it was obsessed with making money to attain a higher social status. Their core value is to be survived in the society first. People who fall into this cluster are ambitious when it comes to their income or career.
- Cluster 4 (Weak quality-awareness fashionable +Weak economical consumers). This group is economically constrained. They do not pay much attention to new stuff and new mobile services. They were concerned primarily about making ends meet. This group is not likely to be influenced by others. They are less concerned about external changes in their daily life. Their main focus is to create a feeling of security and belongings in the society.

4.3 The Adoption of Mobile Services by four Lifestyle Clusters

The quality-awareness fashionable dimension has significant effect on all the five categories of mobile services (Communication services $F(1,312)=25.682$, $P<0.001$; Information search services $F(1,312)=25.573$, $P<0.001$; Transaction services $F(1,312)=12.509$, $P<0.001$; Learning/office tools services, $F(1,312)=12.375$, $P<0.001$;

Entertainment services $F(1,312)=8.643$, $P<0.01$), while the economical dimension only has significant effect on the mobile communication services ($F(1,312)=4.057$, $P<0.05$). It turns out that quality-awareness fashionable dimension has stronger impact than the economical dimension toward the adoption of mobile services. This can partially explain why people fall into cluster 1 and cluster 3 are more likely to use and adopt various mobile services than people fall into cluster 2 and cluster 4 respectively.

Another interesting observation is that people who have strong economical concerns is less likely to try and adopt learning/office tools services. They are unlikely to spend money in these services in the Chinese context.

5. CONCLUSION

This study tested the link between different categories of mobile services and consumer lifestyles with the responded valid 313 questionnaire from the biggest city in central China. The results showed that consumers with different lifestyles have different preferences over a number of identified mobile services. In addition, we clustered Chinese consumers into four lifestyle segments by two dimensions: the quality-awareness fashionable dimension and the economical dimension. It was also found that there are some lifestyle factors, such as the investment consciousness and the financial contentment consciousness, having significant negative impact on the adoption of office/learning tools services. Further, the quality-awareness fashionable dimension has stronger impact than the economical dimension toward the adoption of all the five types of mobile services.

It turns out that the influence of lifestyle needs to be incorporated into adoption models and advance adoption theory. To conclude, this study analyzed the interrelationship between lifestyles and usage of mobile services to obtain a better understanding of the adoption of various mobile services in the Chinese context. This research contributes to current literature on mobile services diffusion. It also offers some insights for mobile services providers to better target their potential consumer on the Chinese market.

We were also aware of some limitations in this research. Firstly, the sample size of the study was small. This might reduce the power of our findings. Moreover, the sample used for analysis was drawn from a city in the central part of China, so the generalizability of the results remains to be tested. Last but not least, there might be other factors which influence the adoption of mobile services.

As for future research, we plan to make a deeper exploration on the effect of lifestyle on mobile services adoption by attempting a nationwide sample and further refine the lifestyle clusters in the Chinese context. Another possible direction is to update the present study with a longitudinal design.

6. REFERENCE

- [1] C. Carlsson, J. Carlsson, K. Hyvonen, J. Puhakainen, and P. Walden, "Adoption of Mobile Devices/Services - Searching for Answers with the UTAUT," in *Proceedings of the 39th Annual Hawaii International Conference on System Sciences - Volume 06*: IEEE Computer Society, 2006, p. 132.1.
- [2] K. C. C. Yang, "Exploring factors affecting the adoption of mobile commerce in Singapore," *Telemat. Inf.*, vol. 22, pp. 257-277, 2005.
- [3] L.-d. Chen, "A model of consumer acceptance of mobile payment," *Int. J. Mob. Commun.*, vol. 6, pp. 32-52, 2008.
- [4] S. Gao, S. P. Moe, and J. Krogstie, "An Empirical Test of the Mobile Services Acceptance Model," in *Mobile Business and 2010 Ninth Global Mobility Roundtable (ICMB-GMR), 2010 Ninth International Conference on*, 2010, pp. 168-175.
- [5] P. Luarn and H.-H. Lin, "Toward an understanding of the behavioral intention to use mobile banking," *Computers in Human Behavior*, vol. 21, pp. 873-891, 2005.
- [6] S. Gao, J. Krogstie, and K. Siau, "Developing an Instrument to Measure the Adoption of Mobile Services," *Mobile Information Systems Journal*, vol. 7, pp. 45-67, 2011.
- [7] S. Gao and J. Krogstie, "Explaining the Adoption of Mobile Information Services From a Cultural Perspective," in *the 10th International Conference on Mobile Business (ICMB 2011)*, Como, Italy, 2011.
- [8] A. Mitchell, *The nine American lifestyles: Who we are and where we're going*: Warner Books, 1984.
- [9] R. Pitts and A. Woodside, *Personal Values and Consumer Psychology*: Lexington Books, 1984.
- [10] William F. Schoell and J. P. Guiltinan, *Marketing: Contemporary Concepts and Practices*: Prentice Hall, 1995.
- [11] B. D. Zablocki and R. M. Kanter, "DIFFERENTIATION OF LIFE-STYLES," *Annual Review of Sociology*, vol. 2, pp. 269-298, 1976.
- [12] J. P. Peter and J. C. Olson, *Understanding consumer behaviour*: Irwin (Toronto and Chicago), 1994.
- [13] W. D. Wells and D. J. Tigert, "Activities, interests and opinions," *Journal of Advertising Research*, vol. 11, pp. 27-35, 1971.
- [14] Y. Wu, "The Research towards Model of China-Vals," *Nankai Business Review*, vol. 8, pp. 9-15, 2005.
- [15] T. Anderson and L. L. Golden, "LIFESTYLE AND PSYCHOGRAPHICS: A CRITICAL REVIEW AND RECOMMENDATION," *Advances in Consumer Research* vol. 11, 1984.
- [16] J. T. Plummer, "The Concept and Application of Life Style Segmentation," *The Journal of Marketing*, vol. 38, pp. 33-37, 1974.
- [17] M. d. Reuver and H. Bouwman, "Explaining Mobile Internet Services Adoption by Context-of-Use and Lifestyle," in *Ninth International Conference on Mobile Business/ Ninth Global Mobility Roundtable*, Athens, Greece, 2010, pp. 176-182.