

# Understanding Cybercafés Users behavior in Mainland China: An Exploratory Study

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## Abstract

As a major venue of public access to Information and Communication Technologies (ICT), cybercafés in China have been contributing to the increase of ICT penetration, especially Internet penetration for the last decades. However, social problems related to Internet addiction and even juvenile delinquencies are considered as correlated with cybercafés. The objective of this research is to find influencing factors of users' intension to go to cybercafés and what are the impacts on cybercafé users. The exploratory research proposes a conceptual framework for understanding cybercafé users behavior based on Theory of Planned Behavior. Open questionnaires, interviews and observations are adopted to elaborate the user behavior framework. And a cybercafé user survey is launched to test the framework and further explore user behavior patterns. The user behavior framework is well fitted with the survey data. Internet speed and cybercafé facilities are found to be most influencing factors in users' choice of cybercafés. Chatting and gaming are found to be major activities in cybercafés. Urban and rural users behavior are similar in general. Rural users expect more but achieve less in cybercafés. Internet addiction is found not as serious as reported. Lack of installed software and printers is found to be a barrier of users' instrumental use. And differentiate government policy regulations with regards of rural and urban cybercafés could be beneficial to both the cybercafé industry development and the ICT penetration.

## Index Terms

Behavioral science, Cybercafé user impact, Cybercafé regulations, Internet

Manuscript received July 30, 2010. This work was supported in part by the Amy Mahan Fellowship Program to Access the Impact of ICT Public Access Venues and the National Science Foundation of China No. 70801059.

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## I. INTRODUCTION

IT has been widely accepted that information and communication technologies (ICT) adoption has a significant positive contribution to socioeconomic development. Public venues for ICT access enable more people to access ICT with lower cost, by sharing limited ICT facilities and infrastructures. It is crucial to develop public ICT access venues to encourage ICT use among mass majority, especially in developing countries.

The development of public access to Internet in China is characterized by paid cybercafé as the dominant of public access venue. Cybercafés have become prosperous in China since the late 90's. However, teenager Internet addiction, illegal Internet trading, Internet safety issues, and social security risks occurred accompany with the thrived cybercafé industry. Cybercafés in China, as major means to access Internet for rural and low income group, are now facing a hard situation of strict regulations and loss of business.

This study is designed to assess users of cybercafé for ICT services and products based on their socio-demographic and economic characteristics, pattern of service utilization, intension to go and willingness to pay for services, as well as their perceived beneficial impact received from consumptions at cybercafés. With this information, we intend to test whether beneficial impact to users significantly exist and identify the best means of sustaining profit-oriented cybercafés and also formulate policy recommendations to make ICT services affordable and benefit all categories of users.

Furthermore, our study will target on identification of differences between urban cybercafés and rural cybercafés. Our study will identify choice of services and products for different categories of users and thereby be able to suggest the kind of services that should be provided by the PAVs, so that all categories of users will be enticed to use the internet.

## II. REVIEW ON TYPES OF USE IN CYBERCAFÉS

Cyber cafés are used primarily to meet personal and social needs such as communicating with friends and family,

entertainment, gaming, and developing computer skills. Adomi (2007) discovered that 60.7% of the internet users in cyber cafés are to explore the services and resources of the Net. Chachage's (2001) findings showed the largely male, Tanzanian population used the Internet primarily for personal communication and visiting recreational sites. Low levels of awareness and training among end-users and staff were noted.

Based on a multi-national survey of Internet use, and by making a distinction between "instrumental" and "recreational" use, Boase et al. (2002) found that recreational use is more common among younger users. The authors do not offer definitions of instrumental and recreational, but examples of instrumental use are sending and receiving e-mail, using online libraries and other sources of information, taking online courses, doing business, and various administrative activities. Examples of recreational use include chatting, collective role-playing, and playing online multi-user games. These authors additionally discussed a third category of use, which is "communication" and keeping in touch with relatives and friends. Also Shiu and Dawson (2004) found that teenagers in Great Britain, Germany, Japan and Taiwan use the Internet especially for activities such as communication and gaming, while older people to a larger extent use it for instrumental purposes such as purchasing goods and services.

Li and Kirkup (2007) compared the use of the Internet among Chinese and British students and found that men in both countries played more computer games than women. The Chinese were the most active game players. Generally, women were more inclined to use the Internet for study purposes and men for "personal interests". Gender differences in type of use were higher among the British than in the Chinese group, and the British students were generally more inclined to use Web-connected computers for study purposes. From the US, Montgomery (2000) concluded that a comprehensive policy agenda is needed to promote the positive potential and minimize the harms of new digital media in the lives of youth.

Instrumental use is statistically associated with user experience, in the way that "veterans" use the Internet significantly more for instrumental purposes compared to "newbies" (Boase et al., 2002; Center for the Digital Future, 2004). Less experienced users tend to spend more time playing online games, downloading music, and participating in chat rooms. From Indonesia, previous studies have reported on Web use patterns among a dominantly young and male user group. Based on "history files" in cyber café computers in Indonesia, it was found that pornographic websites exceeded 50% of visited sites at some locations (Hill, 2003). Another study from Indonesia found that chatting is the most popular online activity, followed by entertainment, reading online magazines, sports information, and educational use (Harkness, 2001). From another context, Jeffres et al. (2004) found that the diversity of Web use is clearly correlated with frequency of Internet use and the number of years one has been using the internet. Generally, it seems that the more people use the Internet recreationally, the more they use it instrumentally (Boase et al., 2002).

### III. METHODOLOGY

#### A. Theoretical Foundations

According to Theory of Planned Behavior (TPB), a person's actual behavior in performing certain actions is directly influenced by his or her behavioral intention and, in turn, is jointly determined by his or her attitude, subjective norms and perceived behavioral controls toward performing the behavior (Ajzen, 1991). Behavioral intention is a measure of the strength of one's willingness to exert effort while performing certain behaviors. In this study, users' come and pay for a cybercafé services is actual behavior, which is lead by user's intension to come to the cybercafé (i.e. the behavioral intention). Attitude (A) explains a user's favorable or unfavorable assessment regarding his/her intentions to come and pay in cybercafé. Subjective norm (SN) expresses the perceived social pressure of users who intends to come and pay in cybercafé. Perceived behavioral control (PBC) reflects a person's perception of the ease or difficulty of implementing pay behavior.

Both cybercafé factors and users' demographic factors should serve as independent variables. Cybercafé factors influence users' intension to come through their attitude, whereas users' demographic factors influence users' intension to come through subjective norms and/or behavioral control. Users' past experiences are also important factors influence their intension to come and pay at a cybercafé. Besides direct influences, users' past visits may also influence their behavioral control and indirectly influence their intension to come. Users' behavior of willingness to pay to come to a Cyber café may lead to beneficial impact on them, and these beneficial impacts (if there is any) may also influence their attitude and indirectly influence their intension to come.

#### B. Exploratory Survey Design

In order to elaborate the proposed conceptual framework, independent variables need to be explored for possible valuations. A user exploratory survey is conducted among a group undergraduate students and users in two cybercafés, one of which is located in downtown Beijing and the other is located in a small village near Beijing city.

Open questionnaires are used in user survey to exert most variety of influencing factors and perceived benefits. Answers are summarized by the frequency of factors. Similar factors in different expressions are considered as the same factor. Judgments are made by researchers. Observations on cybercafé environment, customers' identities and activities, seated occupancy ratio, service provided are recorded as supplemental information in future analysis.

#### C. Main Survey Design

According to theory framework construction and exploratory user survey, a questionnaire with 27 questions is designed to test the TPB-based cybercafé user model and to explore users' behavior in cybercafés. The questionnaire contains questions about users' demographic information, cybercafé factors, attitudes, social norms, perceived impacts, and past experiences.

To explore the problematic Internet use, the questionnaire also includes Internet addiction questions and personal objective questions.

20 cybercafés are randomly selected from 10 cities and their nearby counties using a cluster sampling approach. The sample frame is a cybercafé list provided by a cybercafé administration software company, which dominate around 60% market share in China. 10 investigators are sent out to collect the data from the field. 976 effective answers are collected during the survey. Among the collected questionnaire, 20% subjects are rural users. Results of the user survey, operation interview and the framework testing are presented in the next section.

#### IV. RESULTS

##### A. Exploratory Survey Result

Exploratory surveys contain open questions for subjects to write down factors influence their willingness to pay for a certain cyber café. Although the students tend to write down more vocabularies than cybercafé users from the field, the factors influencing their choices are similar, as shown in Table I. Most frequent cybercafé factor is environment, followed by Internet speed, hardware, price and services. Most frequent factor indicating their beneficial impact from come to a cybercafé is hanging out with friends, entertainment and information seeking.

	Students	Urban users	Rural users
Numbers	29	18	20
Most frequent factors	Environment, speed, facility, price	Environment, services	Environment, speed, price
Most frequent perceived beneficial impact	Play with friends, kill time	Relax, search information, communication	Communication, relax, search information

Accord with the user survey results, user interviews also indicated that environment as most important factors and social networking as major activities. For the environment factor, both student users and urban users mentioned about whether there is a convenient setting for them to settle down with their friends is an important feature for their choice of cybercafé. Urban and rural users who are immigrant workers expressed a strong feeling of communication with their family as a beneficial impact from cybercafé services, and a comfortable setting for them to chat or talk to their family and friends are important for their decisions of cybercafé visit.

##### B. TPB-based Cybercafé User Model Testing

Structured equation model (SEM) is employed to test the aforementioned TPB-based cybercafé user model. Questionnaire answers are collected and analyzed using Microsoft Excel, SPSS and AMOSS. From the modeling result,

the questionnaire data fits the model (Minimum is achieved, Chi-square = 2330.729, and  $P < 0.01$ ):

1, Cybercafé factors have positive influence on users' attitude towards cybercafé. Internet speed and facility (computers and software) are most influential factors. Food service and stay-overnight serve are less influential factors.

2, Users' activities have positive influence on users' behavior control. Social networking users' and Internet surfing are most influential factors. Gaming and Movie/TV are less influential factors.

3, Behavior control, attitude and subjective norms are influencing factors of users' intention to come to a cybercafé. Behavior control and attitude have higher influencing level than subjective norms.

4, Users' intention to come to a cybercafé has positive influence on users' willingness to pay at a significant level.

##### C. Impact of Cybercafés

Cybercafés are proved to be places to access computers and Internet when there are no other means for their uses. Reasons of use cybercafés are summarized in Table II. ICT access and be with friends are major reasons for both urban and rural users. And more rural users use cybercafé because they do not have computers or Internet access.

	Urban	Rural	Sum
No computers	22.0%	41.1%	25.7%
No Internet access	16.4%	14.7%	16.1%
Be with friends	31.0%	26.8%	30.2%
Need help in cybercafé	2.7%	3.7%	2.9%
Better Internet access	21.6%	9.5%	19.3%
Others	6.2%	4.2%	5.8%
	100.0%	100.0%	100.0%

Numbers and achievement level of general self-determined objectives and self-determined objectives through use cybercafés are summarized in Table III. Rural users have more objectives than urban users however level of achievements are lower. Rural users have less cybercafé use experiences and more cybercafé use percentage (in terms of all the ICT access means) than urban users.

	Urban	Rural	All
General Self-determined Objectives	7.16 44%	7.87 40%	7.3 43%
Self-determined Objectives thr cybercafé	7.95 47%	10.22 43%	8.39 46%
Cybercafé use percentage	38.29%	43.21%	39.25%
Cybercafé use year	6.74	5.96	6.59

#### D. Internet Addiction and Cybercafés

Internet addiction is usually associated with Cybercafés in media reports in China. Cao's Internet addiction measures are included in our questionnaire (Cao et al, 2007). Only 18.1% users are Internet addicted which is less than reported. We calculate cybercafé use time percentage (over time of all Internet access means, i.e. home, office etc.) for each individual. And no correlations are found between cybercafé use time and internet addiction. This means that the existence of cybercafés is at least not the major reason for Internet addiction problems.

#### V. CONCLUSIONS AND FURTHER RESEARCH

A TPB-based user behavior model is proposed for cybercafé user research. An exploratory study among students, rural and urban people is designed to discover related factors to elaborate the TPB-based cybercafé user model. And a main survey on cybercafé user behavior is designed and implemented to test the proposed TPB-based cybercafé user model and to explore other distinctive user behavior patterns.

TPB-based cybercafé user model are well fitted with main survey data. Urban and rural users show no difference in terms of cybercafé activities and behavioral models. But more rural users use cybercafé because they do not have other means to access ICT. And rural users are likely to have more personal objectives to achieve through using a cybercafé. However the objective achievement level of rural users is generally less than urban users. This may mean rural users need more assistance in using the cybercafés.

Since only basic statistical analysis and model testing are done to the survey data, more detailed analysis and tabulation on different view of the data will be done in the next step. Preliminary suggestions on encourage cybercafé business in low-income and rural area are also hopefully to be given after the detailed analysis in our future research.

**Acknowledgement:** This work was carried out with the aid of the Amy Mahan Research Fellowship Program to Assess the Impact of Public Access to ICTs grant from the International Development Research Centre (IDRC), Ottawa, Canada, administrative support from the University Pompeu Fabra (UPF), Barcelona, Spain, and technical support from UPF and Francisco J. Proenza and Abiodun Jagun.

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