

Internet Usage: An Examination of Motivations and Quality of Life for Low-income Groups in Urban China

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ABSTRACT

The objective of this study is to examine the relationships between quality of life and demographics, personality traits, motivations, Internet use, traditional media use, and non media-related leisure activities among a group of low-income Internet users in urban China. Results from an online survey, based on a snow ball sample of 415 respondents, found that social interaction, social escapism, information, and pass time were the main motivations for internet use. The study also showed that Internet usage is positively related to quality of life, and non media-related leisure activities was the strongest predictor of life quality for the low-income groups in urban China. Policy implications of the results are also discussed.

Word count: 112

Keywords: Internet usage; low-income groups; quality of life; urban China; uses & gratifications

INTRODUCTION

Internet has revolutionized the computer and communication world like nothing before, and it is a worldwide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals without regard for geographic location (Leiner et al., 1997). From the late 1990s, Internet experienced an explosive growth in China. According to the annual report of International Telecommunication Union (International Telecommunication Union, 2011), today, Internet users in China represent almost 25% of the world's total Internet users. Based on the 29th Statistical Report on Internet Development in China which was released by China Internet Network Information Center in January, 2012 (China Internet Network Information Center, 2012), as of December, 2011, the number of net citizens in Mainland China has reached 513 million, and 73.5% of them are from urban¹ areas reaching at 377 million. Meanwhile, the CNNIC (China Internet Network Information Center, 2012) report also points out that 59.9% of the Chinese Internet users' personal income is less than 2000 Yuan per month. The report of the National Bureau of Statistics of China in January, 2012 (National Bureau of Statistics of China, 2012) showed that per capita income of urban residents stood at 23,979 Yuan in 2011, which is approximately 2000 Yuan per month. Considering the huge number of Internet users are in urban residence and close to 60% of the urban residents earn fewer than 2000 Yuan a month, thus the low-income groups in urban areas in Mainland China can be regarded as a special population group for research.

For the low-income groups living in urban areas, the need for Internet is not supposed to be one of basic needs for everyday life such as food, water, electricity etc.; however, the status

¹ According to the definition of National Bureau of Statistics of China, urban areas refer to cities and townships. Cities refer to districts under the jurisdiction of a city with district establishment and street committees under the jurisdiction of a city without district establishment. http://www.stats.gov.cn/tjbz/t20061018_402603208.htm. According to the definition of the China Statistical Yearbook 2011, urban residents in this study refer to the citizens who live in urban areas for at least recent six months.

quo clearly shows that the number of low-income net citizens is still apparently huge. This brings us many questions: why do low-income groups use Internet? What need do they want to satisfy? Does the Internet usage improve their life quality? Which one can bring them higher quality of life, the Internet usage, the traditional media usage or non media-related leisure activities? Previous research has already explored the relationship between Internet usage and quality of life (Leung & Lee, 2005), but almost no research focuses on the low-income groups. The number of low-income groups in urban areas of Mainland China is over 170 million, and it has significant meaning to answer these questions. This research will clearly show (1) the motivations of Internet usage of low-income groups, (2) the relationship between motivations, demographics, the personality traits and the Internet usage, (3) the relationship between Internet usage and quality of life as well as the comparison of Internet usage, traditional media usage and non media-related leisure activities.

LITERATURE REVIEW

Internet Usage Motivations and U&G Theory

The uses and gratifications perspective is considered one of the most widely accepted theoretical frameworks to study media adoption and use (Lin, 1996; Kang & Atkin, 1999), particularly in the realm of new media (e.g., Atkin et al., 1998; Morris & Ogan, 1996; Rafaeli, 1984; Lin, 1996; Newhagan & Rafaeli, 1996). The main objective of uses and gratifications theory is to explain the psychological needs that shape why people use the media and that motivate them to engage in certain media-use behaviors for gratifications that fulfill those intrinsic needs (Lin, 1999a; Rubin, 1994; Ko et al., 2005). Previous scholars have successfully applied uses and gratifications theory into research of Internet usage motivations and examined

psychological and behavioral aspects of Internet users to identify a set of common underlying dimensions for Internet usage motivations (LaRose, Mastro, & Eastin, 2001; Lin, 1999b; Ko, Cho, & Roberts, 2005). December (1996) identified three broad categories for why people use the Internet: communication, interaction, and information. Likewise, Eighmey and McCord (1998) found some support for their contention that people employ the Internet to satisfy the same needs that they bring to their consumption of other media (Cho et al., 2003). Korgaonkar and Wolin (1999) examined Internet users' motivations and concerns by categorizing 41 items into seven factors: social escapism, transactional security and privacy, information, interactive control, socialization, nontransactional privacy, and economic motivation. The study by Korgaonkar and Wolin suggested that people use the Internet not only for retrieving information, but also for seeking entertainment and escape. Papacharissi and Rubin (2000) also developed a scale of Internet usage motivations that consisted of five primary motives for using the Internet: interpersonal utility, pass time, information seeking, convenience, and entertainment (Ko, Cho, & Roberts, 2005). Uses and gratifications theory has been quite effective in understanding motivations and needs for using the Internet (Ko, Cho, & Roberts, 2005).

Although there are plenty of researches focusing on motivations of Internet usage, however, few researches have been done on the Internet usage motivations for low-income groups especially for those in urban areas of Mainland China. Thus, this study raised the following research questions:

RQ1.1: What are the motivations of Internet usage for low-income groups in urban China?

RQ1.2: Which motivation is the strongest predictor of Internet usage for low-income groups in urban China?

H1.1: Age is negatively related to Internet usage for low income groups in urban China.

RQ2: Is there any gender difference on the Internet usage of low-income groups in urban China?

H1.2: Educational level is positively related to Internet usage for low income groups in urban China.

Personalities and Internet Usage

In recent years, there has emerged a limited, but growing research literature on personality traits in relation to Internet usage (Landers & Lounsbury, 2006). Personality traits represent relatively enduring characteristics of individuals that show consistencies over their life spans and across a wide range of situations (Pervin & John, 1997). Moreover, personalities have been proved to be related to many human activities and behaviors including music listening preferences (Rentfrow & Gosling, 2003) and television-viewing (Persegani et al., 2002). Meanwhile, personalities have also been studied in relation to the Internet including attitudes toward the Internet (Lavin et al., 1999) and computer expertise (Blair et al., 1999). From the standpoint of creating a meaningful knowledge base in this area, it is important to establish first whether personality traits account for variation in Internet usage, and which traits are relatively more important (Landers & Lounsbury, 2006).

There are so many personality traits to choose based on broader psychological literature, the Big Five model has been considered as an effective and powerful way to analyze the personalities. Big Five categorizes general personality traits into five broad traits: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Empirical studies have verified the overall factor structure and integrity of the Big Five constructs in many different settings and areas of inquiry (Costa & McCrae, 1994; De Raad, 2000). Research has been done

in exploring the relationship between Big Five personality traits and Internet-related activities. For example, Tuten and Bosnjak (2001) found that individuals who are low in neuroticism report lower levels of Internet usage and in particular, information based activities (e.g. using search engines). Hamburger and Ben-Artzi (2000) found that the positive association between extraversion and surfing sex web sites. In the same study, a negative correlation was found between extraversion and traditional social online activities (e.g. chat room visits). In this study, the relationship between the five personality traits and various Internet activities will be examined.

RQ3.1: How are the Big Five personalities related to Internet usage for low-income groups in urban China?

RQ3.2: How do the Big Five personalities predict the motivations of Internet usage for low-income groups in urban China?

This study will also examine how demographics, motivations, personalities, traditional media usage and non media-related leisure activities influence the Internet usage, thus the following research question is raised:

RQ4: To what extent can demographics, personalities, motivation of Internet usage, traditional media usage, and non media-related leisure activities predict the Internet usage for low-income groups in urban China?

Internet Usage and Quality of Life

Quality of Life (QoL), is a well-established concept in social sciences defined as “a global assessment of a person’s life satisfaction according to his chosen criteria” (Shin & Johnson, 1978), and it is also a cognitive judgmental process. The term quality of life was

emerged from the research on social indicators (e.g., Schuessler & Fisher, 1985), and it is generally used to refer to an overall evaluation of the conditions of life as experienced by an individual (Dew & Huebner, 1994). Diener et al.(1985) pointed out that “the judgment of how satisfied people are with their present state of affairs is based on a comparison with a standard, which each individual sets for himself or herself and it’s not externally imposed.”

The quality of life or life satisfaction is usually explained by two perspectives: subjective and objective perspectives (Diener, 1984). The subjective construct hypothesizes that perceived quality of life is influenced by personality or dispositional factors (e.g., optimism, pessimism, isolation, self-worth, and neuroticism). On the other hand, the objective construct proposes that life quality is affected by environmental or situational factors (e.g., family, job, leisure, neighborhood, community, and satisfaction with standard of living) (Leung & Lee, 2005).

For objective perspective of QoL, people’s quality of life tends to be a direct function of their evaluations of important life domains such as social support, leisure activities, and standard of living of overall life (e.g., Andrews, 1986; Andrews & Withey, 1976; Diener, 1984); (Leung & Lee, 2005). “Standard of living” here means “being materially better off” than others (Andrews & Withey, 1976; Diener, 1984; Zinkhan & Preshaw, 1994; Leung & Lee, 2005). Thus, the more satisfied oneself feel about the standard of living, the more satisfied oneself feel about one’s life and vice versa.

Adoption of new technologies and innovations is always the indicator of a high standard of living (McPheat, 1996). Previous researches have studied the interrelationship between the perceived QoL level and technological innovations, such as television (Sirgy et al., 1998) and the Internet (Leung & Lee, 2005). Anderson and Tracey (2001), Bier et al. (1997), and Henderson (2001) suggested that Internet has potential positive effect on informationally disadvantaged or

low-income families to obtain powerful emotional and psychological transformations in identity, self-esteem, personal empowerment, confidence etc. (Leung, 2010). Many other researches also have concerned about Internet usage and its relationship with self sufficiency, psychological empowerment, lifelong learning, and rehabilitation (Bier et al., 1997; Hu & Leung, 2003; Leung & Lee, 2005; Wellman & Haythornthwaite, 2002). However, only a few of these researches mentioned the situation in Mainland China, and the low-income groups are seldom considered. Thus, the study raised the following hypothesis:

H2: Internet usage is positively associated with quality of life for low-income groups in urban China.

Traditional Media Usage, Non Media-related Leisure Activities and Quality of Life

In the studies of leisure activities and quality of life, activity theory has been always applied. The activity theory suggested that both the frequency of participation and the degree of intimacy associated with the activity influence life satisfaction. The greater the frequency and the more intimate the activity, the greater the life satisfaction (Lemon et al., 1972). As an important determinant of life quality, one question about leisure activities is always been discussed by scholars: whether place-centered leisure activities which take place in urban parks or sporting and entertainment venues contribute more to a person's self-reported quality of life, or whether quality of life is primarily influenced by people-centered factors such as social interaction, sense of achievement, and level of satisfaction with one's leisure lifestyle. Based on the research of Auld and Case (1997), social interaction is a central component of leisure activities, and Lloyd and Auld (2002) found that the people-centered leisure activities were the best predictor of quality of life. According to the research of Csikszentmihalyi (1997), the most positive

experiences people report are usually those with friends. Furthermore, Cummins (1996) found that a hierarchy of domain satisfaction existed which was dominated by the domain of intimacy (e.g., family, friends, marriage and partnerships). Social leisure activity has been shown to have a positive influence on the QoL of a diverse range of social groups including: middle-aged at-risk women (Benum & Anstorp, 1987), the aged (Siegenthaler & Vaughan, 1998), the unemployed (Iwasaki & Smale, 1998) and the dissatisfied employed (Winefield et al., 1992). Meanwhile, previous research also has shown a positive relationship between life satisfaction and participation in physical leisure activities such as sports and exercise (Leung & Lee 2005; Melin et al., 2003; Schnohr et al., 2005; Wankel & Berger, 1990). In this study, the non mediated-related leisure activities will include both place-centered and people-centered activities. Since few studies are focusing on quality of life for Chinese people, especially for the low-income net citizens in Mainland China, as assumed that Internet usage could improve the life quality for these people, do the non media-related activities also improve their quality of life? Which one can bring them higher quality of life, the Internet usage, traditional media usage or non media-related leisure activities? Based on previous literatures, the study raised the following hypothesis and research question:

H3: Non media-related leisure activities are positively associated with quality of life of low-income groups in urban China.

RQ5: To what extent do demographics, personalities, motivations of Internet usage, traditional media usage, Internet usage and non media-related leisure activities predict the quality of life for low-income groups in urban China?

METHOD

Sample and Sampling Procedures

Data were collected from a snow ball sample with total number of 945, 415 of them are valid data as they are low-income urban Internet users in Mainland China. A self-administered online survey was hosted on Wenjuanxing ([www. sojump.com](http://www.sojump.com)) from 10th to 24th March, 2012. Invitations with a link to the questionnaire were sent through various channels such as Weibo, QQ and social network sites like Renren.

The data were collected from 29 provinces and municipalities, and consisted 64.6% females and 35.4% males. The age of the respondents were from 18 to above 40; 57.6% of them were 18-25, 13% of them were 26-30, 8.2% of them were 31-35, 6.5% of them were 36-40 and 14.7% of them were above 40 years old. The educational level of the respondents was from junior middle school to postgraduate and above. To be more specific, 2.9% of them completed junior middle school, 16.9% of them graduated from high school, 16.1% of them graduated from junior college, 48.2% of them have bachelor degree, and 15.9% of them have master degree or above. Based on the data, as low-income groups the majority of them have bachelor degree or even above, this makes sense as since 1999, the government expands the enrollment of the universities every year, although it becomes easier to get a bachelor degree and more and more people can enjoy high quality of education, but the increasing number of undergraduates also makes it more difficult to find a good job, and it is now a serious social problem for Chinese government.

Measurement

Motivations of Internet Usage: Respondents were asked to indicate their level of agreement with 11 statements which are based on the studies of motivations of Internet usage by Papacharissi and Rubin (2000), Ko (2000), and Korgaonkar and Wolin (1999). Although motives are different among individuals with diverse socio-demographic backgrounds, these 11 statements are supposed to cover most of the motivational dimensions of Internet usage of the target groups. Respondents were asked about agreement with each item on a five-point Likert scale for why they used Internet with “1”=“strongly disagree”, “2”=“disagree”, “3”=“ordinary”, “4”=“agree” and “5”= “strongly agree”. The factor analysis in Table 1 found four factors: social interaction need (alpha = .79), pass time need (alpha = .69), social escapism need (alpha = .66), and information seeking need (alpha = .75). The four factors explained 68.47% of the variance.

(* Insert Table 1 About Here *)

Personalities: As one of the most commonly used measures in physiological studies, Big Five Inventory (John, Naumann, & Soto, 2008) was used in this study. Ten items were adopted from BFI, and the questionnaire used the official Chinese version of this scale. Respondents were asked “I see myself as someone who...”. A five-point Likert scale was used with “1”= “disagree strongly”, “2”= “disagree a little”, “3” = “neither agree nor disagree”, “4”= “agree a little” and “5”= “agree strongly”. Extraversion was measured by the items: (1) is talkative; (2) is outgoing, sociable; the alpha was .73. Neuroticism was measured by the items: (1) worries a lot; (2) gets nervous easily; the alpha was .65. Openness was measured by the following items: (1) is original, comes up with new ideas; (2) has an active imagination; the alpha was .70. Agreeableness was measured by the following items: (1) is helpful and unselfish with others; (2) is considerate and kind to almost everyone; the alpha was .59. Conscientiousness was measured by the following

items: (1) perseveres until the task is finished; (2) makes plans and follows through with them; the alpha was .56. The reliability of the agreeableness and conscientiousness were not ideal due to the length limit of the questionnaire, only two items were adopted from BFI for each of the dimension, however, the original BFI scale has 48 items for the five dimensions, thus it leads to the low reliabilities. Besides, the gender ratio may be another reason as over 60% of the respondents were females, and only less than 40% were males.

Internet Usage: Internet usage has four dimensions with 11 items which were fully adopted from Leung and Lee (2005): information seeking activities, fun seeking activities, e-commerce activities, and sociability activities. It was measured by asking respondents the frequency of these activities. A five-point Likert scale was used with “1”= “never”, “2”= “seldom”, “3”= “sometimes”, “4”= “often”, “5”= “very often”. Information seeking activities included the following items: learning from the Internet, searching for information and reading online news; the alpha for this dimension was .70. Fun seeking activities included: listening to music, watching online movies or dramas and surfing for leisure and entertainment; the alpha was .61. E-commerce activities included items such as purchasing on the Internet (such as online shopping) and using services on the Internet (such as paying bills, account transfer, etc.), the alpha for this dimension was .78. Sociability activities contained three items including: communicating with somebody you did not know before, communicating with somebody you knew before, and talking about aspects of your inner world to other people. The reliability alpha was .62.

Non Media-related Leisure Activities: Respondents were asked the frequency of engaging in the following people-centered and place-centered leisure activities which are most popular in Mainland China. Several items were adopted from research of Leung & Lee (2005):

window shopping, gathering of friends, physical exercise, reading, playing cards/mahjong, Karaoke, cooking, photography, talking to family and friends face to face for more than 10min, and participating in community or religion activities. A five-point scale was used with “1”= “never”, “2”= “seldom”, “3”= “sometimes”, “4”= “quite often” and “5”= “very often”.

Traditional Media Usage: Traditional media usage was measured by asking respondents the frequency of the following activities which were selected from Leung (2009): reading books/newspaper/magazines, watching TV, listening to the radio, watching movie. A five-point Likert scale was used with “1”= “never”, “2”= “seldom”, “3”= “sometimes”, “4”= “often”, “5”= “very often”.

Quality of Life: The Satisfaction with Life Scale (SWLS) developed by Diener et al. (1985) was used to measure quality of life. With good internal consistency and high reliability, SWLS is narrowly focused to assess global life satisfaction (Leung, 2010). Respondents were asked about their agreement with a five-item scale using a five-point Likert scale with “1”= “strongly disagree”, “2”= “disagree”, “3”= “ordinary”, “4”= “agree” and “5”= “strongly agree”. The five items included: (1) “in most ways my life is close to my ideal”; (2) “the conditions of my life are excellent”; (3) “I am satisfied with my life”; (4) “so far I have gotten the important things I want in life”; and (5) “if I could live my life over, I would change almost nothing”. The alpha for the scale was high at .83.

Demographics: Questions about the demographics were asked including gender, age and education level. For income, respondents were asked “How much is your personal income per month?” with “1”=“0-500 Yuan”, “2”=“501-1,000 Yuan”, “3”=“1,001-1,500 Yuan”, “4”= “1,501-2,000 Yuan,” and “5”=“above 2,000 Yuan”. For the current residence, respondents were asked “Where is your residence in recent half year?” with “1”= “urban areas” and “2”= “rural

areas". For educational level, the respondents were asked "What is your educational level?" with "1" = "junior middle school", "2" = "high school", "3" = "junior college", "4" = "undergraduate," and "5" = "postgraduate and above".

FINDINGS

Motivations of Internet Usage

RQ1.1 focused on the motivations of Internet usage, from Table 1, the data showed that there are four motivations: social interaction need, social escapism need, information seeking need, and pass time need. RQ1.2 focused on examining which motivation is the strongest predictor of Internet usage. Regression results in Table 2 showed that the social interaction need ($\beta = .39, p < .001$) was the strongest predictor of Internet usage followed by pass time need ($\beta = .16, p < .001$), and information seeking need ($\beta = .13, p < .01$), which means people with higher level of social interaction need will use Internet more. These four factors explained 29% of the variance.

(* Insert Table 2 About Here *)

Personalities, Motivations and Internet Usage

RQ3.1 focused on how the Big Five personalities predict the Internet usage, the regression results in Table 3 showed that openness ($\beta = .18, p < .001$) was the strongest predictor of Internet usage followed by extraversion ($\beta = .17, p < .001$) and neuroticism ($\beta = .15, p < .001$), however agreeableness and conscientiousness were not significantly related to Internet usage. This indicates that people with higher level of openness, extraversion and neuroticism will use Internet more; this result supported the research of Tuten and Bosnjak (2001). These five factors

explained 13% of the variance.

(* Insert Table 3 About Here *)

RQ3.2 examined how different personalities influence the motivations of Internet usage. The regression results in Table 4 showed that openness ($\beta = .16, p < .01$) was the strongest predictor of social interaction need followed by agreeableness ($\beta = .14, p < .05$), which indicates that people with the higher level of openness and agreeableness will have more social interaction need when they use Internet. Neuroticism ($\beta = .22, p < .001$) was the strongest predictor of social escapism need followed by agreeableness ($\beta = .18, p < .01$), which means that the higher level of neuroticism and agreeableness one has, the more social escapism need he will have when use Internet. The data also showed that conscientiousness ($\beta = -.15, p < .01$) was negatively related to social escapism which means that individuals who have higher level of conscientiousness, the less social escapism need they will have. Openness ($\beta = .19, p < .001$) was also the strongest predictor of information seeking need followed by agreeableness ($\beta = .11, p < .05$), which indicates that people with higher level of openness and agreeableness will have more information seeking need. Neuroticism ($\beta = .22, p < .001$) was the strongest predictor of pass time need followed by agreeableness ($\beta = .17, p < .01$) which means that the higher level of neuroticism and agreeableness individual has, the more pass time need he will have when use Internet. Conscientiousness ($\beta = -.12, p < .05$) was negatively related to pass time need, which means that people with higher conscientiousness will have less pass time need.

(* Insert Table 4 About Here *)

Predicting Internet Usage

RQ4 examined how demographics, personalities, motivations of Internet usage, traditional media usage and non media-related leisure activities predict Internet usage for low-income groups in urban China. A hierarchical regression was conducted and the results in Table 5 showed that demographics was the most strongest predictor as it accounted most of the variance at 25%. Age ($\beta = -.13, p < .01$) was negatively related to Internet usage which means that people who are older will use less Internet. Educational level ($\beta = .18, p < .001$) was positively related to Internet usage, which means people with higher education will use Internet more. In the third block, social interaction need ($\beta = .18, p < .001$) was the strongest predictor of Internet usage, followed by pass time need ($\beta = .13, p < .01$) and information seeking need ($\beta = .10, p < .05$). This means people with higher need of social interaction, pass time and information seeking need will use Internet more. In the fourth block, reading ($\beta = .11, p < .01$) and watching movies ($\beta = .19, p < .001$) were positively related to Internet usage, which indicates that people who read more and watch more movies will also use Internet more. In the fifth block, karaoke ($\beta = .09, p < .05$) was positively related to Internet usage, that is to say people who sing karaoke more frequently will also use Internet more, but participating in community or religion activities ($\beta = -.07, p < .05$) was negatively related to Internet usage, indicating that these kind of people will use less Internet.

(* Insert Table 5 About Here *)

Predicting Quality of Life

H2 predicted that Internet usage is positively related to quality of life for low-income groups in urban China. A correlation test was conducted and the results show that Internet usage

($r = .15, p < .01$) was positively related to quality of life, thus H2 is strongly supported. H3 predicted non media-related leisure activities are positively related to quality of life for low-income groups in urban China. Table 6 showed that all the items were positively related to quality of life except playing cards/mahjong, this item was not significantly related to quality of life which means that playing cards/mahjong has no relationship with quality of life, thus H3 is partly supported.

(* Insert Table 6 About Here *)

RQ5 examined how demographics, personalities, motivations of Internet usage, traditional media usage, Internet usage and non media-related leisure activities predict quality of life for low-income groups in urban China. From Table 7, regression results showed that personalities accounted most of the variance at 13%. In the first block, gender ($\beta = .17, p < .001$) was positively related to quality of life, meaning that gender difference can predict quality of life. In the second block, neuroticism ($\beta = -.17, p < .001$) was negatively related to quality of life, which shows that people with higher level of neuroticism hardly enjoy higher quality of life; conscientiousness ($\beta = .14, p < .01$) was positively related to quality of life which indicates that people with higher level of conscientiousness can enjoy higher quality of life. In the fifth block, physical exercise ($\beta = .15, p < .01$) and cooking ($\beta = .15, p < .01$) were both positively related to quality of life which means that people who do more physical exercise or cooking will enjoy higher quality of life. In the sixth block, information seeking ($\beta = .14, p < .05$) was the only significant factor with quality of life; this means that people with more information seeking activities on Internet can have better quality of life. In addition, the data also showed that for low-income groups, more non media-related leisure activities can bring them higher quality of

life, followed by traditional media usage and Internet usage. The variances they accounted were 6%, 2%, and 1% respectively. This result is unexpected and it shows that even Internet is popular nowadays, but for low-income people, it does not affect too much on their quality of life.

(* Insert Table 7 About Here *)

CONCLUSIONS AND DISCUSSIONS

This study mainly focused on low-income groups in urban areas of Mainland China, and examined multiple relationships between demographics, personalities, motivations of Internet usage, traditional media usage, Internet usage, non media-related leisure activities, and quality of life.

First, this study examined the motivations of Internet usage for the target groups, which are social interaction need, social escapism need, information seeking need, and pass time need. And the study also found that social interaction need is the strongest predictor of the Internet usage. This indicates that for low-income groups, they use Internet mainly because they want to interact with more people; normally building or maintaining a relationship is complicated and costly, but on the Internet the cost can be quite low for communicating with people and choices are numerous as well. For low-income people, these may be the reasons why they want to use Internet for social interaction. Thus, in order to cater their needs, government should build more interaction platforms for low-income groups, now there are “Renren” for students, “Weibo” for white collars, although many low-income people uses QQ as their communication tool on the Internet, however the platforms which are specially for low-income people are still few, they also need their own “Facebook” and “Renren”.

Second, this study also examined the relationship between demographics and Internet usage. The results showed that for low-income people, the older the individual is, the less he will use Internet, as young people are always easier to accept and learn new things. This is the same with previous research (Straits Times, 1996). What's more, the data also showed that the higher educational level the individual has, the more he will use Internet as people with higher education may have more access to Internet and stronger skills to utilize it, this result confirmed the research of Brancheau and Wetherbe (1990).

Third, this study connected Big Five personalities with Internet usage and found that openness is the strongest predictor of Internet usage followed by extraversion and neuroticism. People with higher openness personalities are curious about new things and willing to explore, they are good at imagining and they are always open to the world, this is why they also have more social interaction need and information seeking need when use the Internet. People with higher extraversion love to communicate and interact with others, they are active people in the real world, Internet can provide them a much bigger platform to cater their communication and interaction need, that may be the reason why they would love to use Internet more. People with high neuroticism lack sense of security in real world; and they are easy to be anxious, on the Internet, they have more privacy and the anonymity makes them relaxed, thus this kind of people are possible to use Internet more. The study also found that people with higher conscientiousness have less social escapism need and pass time need when they use Internet. It may be conscientious people usually have positive attitude of life, they focus on what they do, thus life is busy and meaningful for them, they won't be bored and no need to escape.

Fourth, the study connected traditional media usage, non media-related leisure activities and Internet usage and found that people who watch movies or read frequently will use Internet

more. It makes sense as now many services and information are available on the Internet such as book reviews, film reviews, promotions of new books or movies as well as online stores. The offline information channels are limited, thus it drives people who love reading and movies to the Internet. In addition, the study also found that people who love karaoke will use Internet more. Generally speaking, those who like karaoke are active and extraverted, thus they have more possibilities to use Internet more. The data showed that people who participating community or religion activities frequently will use less Internet, those people spend more time on offline activities, thus less time can be spent on Internet.

Fifth, as an important part of the study, the relationships between quality of life and multiple factors were examined including Internet usage, non media-related leisure activities, traditional media usage, demographics, personalities and motivations of Internet usage. The data showed that for low-income groups, the more they use Internet, the higher quality of life they will obtain. And among the four dimensions of Internet usage (e-commerce activities, sociability activities, fun seeking activities & information seeking activities), information activities is the only significant factor for quality of life, which means that people with more information seeking activities on Internet will enjoy higher life quality. For low-income groups, they do not have too much money to spend on E-commerce and how to buy cheap things is already one of their necessary skills, thus E-commerce activities will not make them feel higher life quality. Sociability and fun seeking activities may bring them some gratifications, however, these gratifications are invisible and they even may not feel it. But the information seeking activities can bring them direct convenience and make them feel that quality of life is improved by these activities. For example, when they need the information of railway time tables, they can check it online instead of going to the railway station and checking it all by themselves, in this way they

can feel the benefit of Internet directly, thus it is easy to understand that why information seeking activities are positively related to quality of life for low-income groups. Since more Internet usage can improve their life quality, the government should lower the barrier and provide more free access and discount on Internet service for them, encouraging them to utilize Internet. Besides, government can also build more websites to provide practical information such as legal aid, self-learning courses etc.

In addition to Internet usage, this study also found that non media-related leisure activities are positively related to quality of life. The results showed that physical exercise and cooking contribute most for higher quality life than other activities. Physical exercise can be done everywhere at any time, it is free and have direct impact on health, once people feel healthy, usually they will feel higher life quality. Cooking can bring enjoyment both materially and mentally with low cost. Gathering with families and friends, sharing the nice food and being respect and praised for the excellent cooking skills can always make people happy and contented.

Based on the data, this study compared the impact of Internet usage, traditional media usage and non media-related leisure activities on quality of life and found that for low-income people, and the data showed that non media-related leisure activities contribute most for their higher quality of life. Low-income people may have less dependence on Internet as normally their work is not that related to Internet, thus even without Internet, their quality of life may not be affected too much. Besides, digital divide is another important reason; due to the class and income, low-income people usually have fewer opportunities to explore deeply about the Internet. There is always a possibility that Internet can improve their quality of life, however, they even do not have a chance to know that. It is reasonable that they feel non media-related leisure activities and traditional media can bring them higher quality of life as they are more familiar

with those activities and already benefit from them for a long time. Meanwhile, the weak technology skills may be one of the reasons that prevent low-income people from utilizing Internet to improve their quality of life. The government has the responsibility to narrow the gap of digital divide and create more opportunities for low-income people to learn the relevant knowledge and fully utilize Internet, for example they can provide free Internet skill trainings or organize volunteers to help them learning the skills.

This study partly demonstrated the status quo of the Internet usage and quality of life for low-income groups, and found that they use Internet mainly for social interaction need, but information seeking activities are what actually improve their quality of life, and they believe non media-related leisure activities are more powerful than Internet usage for building higher quality of life. According to the research, policy makers could get a deeper understanding for low-income groups in urban areas of Mainland China and make proper policies to cater their need so that they could enjoy the benefit of the technology as well.

LIMITATION AND FUTURE RESEARCH

Although the study is based on sound theoretical assumptions and are empirically supported, some limitations still exist. First of all, the research is based on a snow ball sampling which makes it less representative. Second, the gender ration of the sample is not perfect as over 60% were females. Third, due to the limited length of questionnaires, some of scales cannot be fully adopted which leads to the low reliability. Fourth, the questionnaire is translated from English into Chinese, thus there may be some unavoidable translation inaccuracy. Future study could improve the sampling method and adopt proper scales to get higher reliability, in addition, future study could also dig deeper on the multiple relationship of the factors in this study and

conduct a comparison research of low-income groups and high-income groups.

REFERENCES

- Anderson, B., & Tracey, K. (2001). Digital living: The impact (or otherwise) of the Internet on everyday life. *The American Behavioral Scientist*, 45(3), 456-475.
- Andrews, F. M., University of Michigan, & University of Michigan. (1986). *Research on the quality of life*. Ann Arbor, MI: Survey Research Center, Institute for Social Research, University of Michigan.
- Andrews, F. M., & Withey, S. B. (1976). *Social indicators of well-being :Americans' perceptions of life quality*. New York: Plenum Press.
- Atkin, D. J., Jeffres, L. W., & Neuendorf, K. A. (1998). Understanding Internet adoption as telecommunications behavior. *Journal of Broadcasting & Electronic Media*, 42(4), 475-490.
- Auld, C. J., & Case, A. J. (1997). Social exchange processes in leisure and non-leisure settings: A review and exploratory investigation. *Journal of Leisure Research*, 29(2), 183-200.
- Benum, K., & Anstorp, T. (1987). Social network stimulation: Health promotion in a high risk group of middle-aged women. *Acta Psychiatrica Scandinavica*, 76(S337), 33-41.
- Bier, M., Gallo, M., Nucklos, E., Sherblom, S., & Pennick, M. (1997). Personal empowerment in the study of home Internet use by low-income families. *Journal of Research on Technology in Education*, 30(2), 107.

- Blair, D. V., O'Neil Jr, H. F., & Price, D. J. (1999). Effects of expertise on state self-efficacy and state worry during a computer-based certification test. *Computers in Human Behavior*, 15(3-4), 511-530.
- Brancheau, J. C., & Wetherbe, J. C. (1990). The adoption of spreadsheet software: Testing innovation diffusion theory in the context of end-user computing. *Information Systems Research*, 1(2), 115-143.
- China Internet Network Information Center. (2012). *Statistical report on Internet development in China*. (No.29). China: China Internet Network Information Center.
- Cho, J., Zuniga, H., Rojas, H., & Shah, D. V. (2003). Beyond access: The digital divide and Internet uses and gratifications. *IT & Society*, 1(4), 46-72.
- Costa, P. T., & McCrae, R. (1994). Stability and change in personality from adolescence through adulthood. In C. F. Halverson, G. A. Kohnstamm & R. Martin (Eds.), *The developing structure of temperament and personality from infancy to adulthood* (pp. 139-150). Hillsdale, NJ: L. Erlbaum Associates.
- Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York: Basic Books.
- Cummins, R. A. (1996). The domains of life satisfaction: An attempt to order chaos. *Social Indicators Research*, 38(3), 303-328.
- De Raad, B. (2000). *The big five personality factors :The psycholexical approach to personality*. Seattle, WA: Hogrefe & Huber.

- December, J. (1996). Units of analysis for Internet communication. *Journal of Communication*, 46(1), 14-38.
- Dew, T., & Huebner, E. S. (1994). Adolescents' perceived quality of life: An exploratory investigation. *Journal of School Psychology*, 32(2), 185-199.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542-575.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71.
- Eighmey, J., & McCord, L. (1998). Adding value in the information age: Uses and gratifications of sites on the World Wide Web. *Journal of Business Research*, 41(3), 187-194.
- Hamburger, Y. A., & Ben-Artzi, E. (2000). The relationship between extraversion and neuroticism and the different uses of the Internet. *Computers in Human Behavior*, 16(4), 441-449.
- Henderson, C. (2001). How the Internet is changing our lives. *The Futurist*, 35(4), 38-45.
- Hu, S. L. Y., & Leung, L. (2003). Effects of expectancy-value, attitudes, and use of the Internet on psychological empowerment experienced by Chinese women at the workplace. *Telematics and Informatics*, 20(4), 365-382.
- International Telecommunication Union. (2011). *The world in 2011: ICT facts and figures*. Geneva: International Telecommunication Union.

- Iwasaki, Y., & Smale, B. J. A. (1998). Longitudinal analyses of the relationships among life transitions, chronic health problems, leisure, and psychological well-being. *Leisure Sciences, 20*(1), 25-52.
- John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative big five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 114-158). New York: Guilford Press.
- Kang, M., & Atkin, D. J. (1999). Exploring the role of media uses and gratifications in multimedia cable adoption. *Telematics and Informatics, 16*(1-2), 59-74.
- Ko, H. (2000). Internet uses and gratifications: Understanding motivations for using the Internet. *The 83rd Annual Meeting of the Association for Education in Journalism and Mass Communication*, Phoenix, AZ.
- Ko, H., Cho, C., & Roberts, M. S. (2005). Internet uses and gratifications: A structural equation model of interactive advertising. *Journal of Advertising, 34*(2), 57-70.
- Korgaonkar, P. K., & Wolin, L. D. (1999). A multivariate analysis of web usage. *Journal of Advertising Research, 39*(2), 53-68.
- Landers, R. N., & Lounsbury, J. W. (2006). An investigation of big five and narrow personality traits in relation to Internet usage. *Computers in Human Behavior, 22*(2), 283-293.

- LaRose, R., Mastro, D., & Eastin, M. S. (2001). Understanding Internet usage: A social-cognitive approach to uses and gratifications. *Social Science Computer Review*, 19(4), 395-413.
- Lavin, M., Marvin, K., McLarney, A., Nola, V., & Scott, L. (1999). Sensation seeking and collegiate vulnerability to Internet dependence. *CyberPsychology & Behavior*, 2(5), 425-430.
- Leiner, B. M., Cerf, V. G., Clark, D. D., Kahn, R. E., Kleinrock, L., Lynch, D. C., . . . Wolff, S. S. (1997). The past and future history of the Internet. *Communications of the ACM*, 40(2), 102-108.
- Lemon, B. W., Bengtson, V. L., & Peterson, J. A. (1972). An exploration of the activity theory of aging: Activity types and life satisfaction among in-movers to a retirement community. *Journal of Gerontology*, 27(4), 511-523.
- Leung, L. (2009). User-generated content on the internet: An examination of gratifications, civic engagement and psychological empowerment. *New Media & Society*, 11(8), 1327-1347.
- Leung, L. (2010). Effects of Internet connectedness and information literacy on quality of life. *Social Indicators Research*, 98(2), 273-290.
- Leung, L., & Lee, P. S. N. (2005). Multiple determinants of life quality: The roles of Internet activities, use of new media, social support, and leisure activities. *Telematics and Informatics*, 22(3), 161-180.
- Lin, C. A. (1996). Looking back: The contribution of Blumler and Katz's Uses of Mass Communication.. *Journal of Broadcasting & Electronic Media*, 40(4), 574-581.

- Lin, C. A. (1999a). Uses and gratifications. In G. Stone, M. Singletary & V. P. Richmond (Eds.), *Clarifying communication theories: A hands-on approach* (pp. 199-208). John Wiley & Sons.
- Lin, C. A. (1999b). Online-service adoption likelihood. *Journal of Advertising Research*, 39(2), 79-89.
- Lloyd, K. M., & Auld, C. J. (2002). The role of leisure in determining quality of life: Issues of content and measurement. *Social Indicators Research*, 57(1), 43-71.
- McPheat, D. (1996). Technology and life-quality. *Social Indicators Research*, 37(3), 281-301.
- Melin, R., Fugl-Meyer, K., & Fugl-Meyer, A. (2003). Life satisfaction in 18-to-64-year-old Swedes: In relation to education, employment situation, health and physical activity. *Journal of Rehabilitation Medicine*, 35(2), 84.
- Morris, M., & Ogan, C. (1996). The Internet as mass medium. *Journal of Communication*, 46(1), 39-50.
- National Bureau of Statistics of China. (2012). *Income of urban and rural residents in 2011*. Retrieved January, 30, 2012, from http://www.stats.gov.cn/english/newsandcomingevents/t20120130_402780563.htm
- National Statistics Bureau of China. (2011). *China statistical yearbook 2011*. Beijing: China Statistics Press.

- Papacharissi, Z., & Rubin, A. M. (2000). Predictors of Internet use. *Journal of Broadcasting & Electronic Media*, 44(2), 175-196.
- Persegani, C., Russo, P., Carucci, C., Nicolini, M., Papeschi, L. L., & Trimarchi, M. (2002). Television viewing and personality structure in children. *Personality and Individual Differences*, 32(6), 977-990.
- Pervin, L. A., & John, O. P. (1997). *Personality: Theory and research* (7th ed.). New York: John Wiley.
- Rafaelli, S. (1984). The electronic bulletin board: A computer-driven mass medium. *Social Science Computer Review*, 2(3), 123-136.
- Rentfrow, P. J., & Gosling, S. D. (2003). The do re mi's of everyday life: The structure and personality correlates of music preferences. *Journal of Personality and Social Psychology*, 84(6), 1236-1256.
- Rubin, A. M. (1994). Media uses and effects: A uses-and-gratifications perspective. In J. Bryant, & D. Zillmann (Eds.), *Media effects advances in theory and research* (pp. 417-436). Hillsdale, N.J.: L. Erlbaum Associates.
- Schnohr, P., Kristensen, T. S., Prescott, E., & Scharling, H. (2005). Stress and life dissatisfaction are inversely associated with jogging and other types of physical activity in leisure time--the Copenhagen city heart study. *Scandinavian Journal of Medicine & Science in Sports*, 15(2), 107-112.

- Schuessler, K. F., & Fisher, G. A. (1985). Quality of life research and sociology. *Annual Review of Sociology, 11*, 129-149.
- Shin, D. C., & Johnson, D. M. (1978). Avowed happiness as an overall assessment of the quality of life. *Social Indicators Research, 5*(4), 475-492.
- Siegenthaler, K. L., & Vaughan, J. (1998). Older women in retirement communities: Perceptions of recreation and leisure. *Leisure Sciences, 20*(1), 53-66.
- Sirgy, M. J., Lee, D., Kosenko, R., Meadow, H. L., Rahtz, D., Cicic, M., & Wright, N. (1998). Does television viewership play a role in the perception of quality of life? *Journal of Advertising, 27*(1), 125-142.
- Straits Times. (1996, November 12, 1996). Finding out who surfs the Internet is their business. *Straits Times*.
- Tuten, T. L., & Bosnjak, M. (2001). Understanding differences in web usage: The role of need for cognition and the five factor model of personality. *Social Behavior and Personality, 29*(4), 391-398.
- Wankel, L. M., & Berger, B. G. (1990). The psychological and social benefits of sport and physical activity. *Journal of Leisure Research, 22*(2), 167-182.
- Wellman, B., & Haythornthwaite, C. A. (2002). *The Internet in everyday life*. Malden, MA: Blackwell Pub.

Winefield, A. H., Tiggemann, M., & Winefield, H. R. (1992). Spare time use and psychological well-being in employed and unemployed young people. *Journal of Occupational & Organizational Psychology*, 65(4), 307-313.

Zinkhan, G. M., & Prenshaw, P. J. (1994). Good life images and brand name associations: Evidence from Asia, America, and Europe. *Advances in Consumer Research*, 21(1), 496-500.

Table 1. Factor Analysis of Motivations of Internet Usage

I use Internet:	Factors				Mean	SD
	1	2	3	4		
Social interaction need						
1. to participate in discussions	.829				3.63	.87
2. so I can talk with other people what's going on	.801				3.72	.85
3. to keep up what's gonging on in the world	.774				4.02	.82
Pass time need						
4. when I have nothing better to do		.771			3.50	.98
5. it's entertaining		.730			3.79	.79
6. because it passes time when bored		.724			3.89	.92
Social escapism need						
7. so I can get away from my problems at hand			.829		2.43	1.04
8. so I can escape from reality			.752		2.37	1.04
9. to forget about schools or any other chores in my life			.650		3.05	1.01
Information seeking need						
10. to learn about things that I haven't know				.864	4.31	.74
11. to learn about things that are useful				.804	4.31	.67
Eigenvalues	3.57	2.02	1.06	.87		
Variance explained	32.47	18.40	9.67	7.93		
Cronbach's alpha	.79	.69	.66	.75		

Notes: Scale used: 1= strongly disagree, and 5 = strongly agree. N = 415

Table 2. Regression Analysis of Motivations on Internet Usage

Predictors	Internet usage
Social interaction need	.39***
Pass time need	.16***
Social escapism need	.00
Information seeking need	.13**
R^2	.30
Adjusted R^2	.29

Notes: *** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$; N=415

Table 3. Regression Analysis of Personalities on Internet Usage

Predictors	Internet usage β
Extraversion	.17***
Neuroticism	.15***
Openness	.18***
Agreeableness	.07
Conscientiousness	.04
R^2	.14
Adjusted R^2	.13

Notes: *** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$; N=415

Table 4. Regression Analysis of Personalities and Motivations on Internet Usage

Predictors	Motivations of Internet Usage			
	Social interaction need	Social escapism need	Information seeking need	Pass time need
Extraversion	.07	.01	-.02	.07
Neuroticism	.09	.22***	.05	.22***
Openness	.16**	-.03	.19***	.01
Agreeableness	.14*	.18**	.11*	.17**
Conscientiousness	.04	-.15**	.05	-.12*
<i>R</i> ²	.10	.08	.08	.09
Adjusted <i>R</i> ²	.09	.07	.06	.08

Notes: *** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$; N=415

Table 5. Hierarchical Regression Analysis of Demographics, Personalities, Motivations of Internet Usage, Traditional Media Usage, and non-media-related Leisure Activities on Internet Usage

Predictors	Internet Usage				
	I	II	III	IV	V
Block 1: Demographics					
Age	-.27***	-.23***	-.19***	-.14**	-.13**
Gender (male=1)	.04	.06	.03	.01	-.03
Education	.29***	.29***	.24***	.21***	.18***
Block 2: Personalities					
Extraversion		.14**	.12**	.11**	.07
Neuroticism		.07	.03	.04	.04
Openness		.15***	.10*	.04	.04
Agreeableness		.07	.00	.01	.01
Conscientiousness		.06	.06	.06	.06
Block 3: Motivations of Internet usage					
Social interaction need			.23***	.19***	.18***
Pass time need			.14**	.15***	.13**
Social escapism need			.03	.03	.03
Information seeking need			.11**	.09*	.10*
Block 4: Traditional media usage					
Reading books/newspaper/magazines				.12**	.11**
Watching TV				.05	.04
Listening to radio				.05	.03
Watching movie				.24***	.19***
Block 5: Non-media-related leisure activities					
Window shopping					.08
Gathering of friends					.04
Physical exercise					-.06
Playing cards/mahjong					.00
Karaoke					.09*
Cooking					.02
Photography					.07
Talking to family and friends FtF					.00
Participating in community or religion activities					-.07*
ΔR^2	.25	.10	.12	.08	.03
R^2					.58
Adjusted R^2					.55

Notes: *** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$; N=415

Table 6. Correlation Analysis of Non-media-related Leisure Activities and Quality of Life

	Quality of Life
Window shopping	.16***
Gathering with friends	.22***
Physical exercise	.28***
Playing cards/mahjong	n.s.
Karaoke	.16***
Cooking	.27***
Photography	.19***
Talking to family and friends face to face more than 10 min	.18***
Participating in community or religion activities	.16***

Notes: *** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$; N=415

Table 7. Hierarchical Regression Analysis of Demographics, Personalities, Motivations of Internet Usage, Traditional Media Usage, Non-media-related Leisure Activities, Internet Usage on Quality of Life

Predictors	Quality of life					
	I	II	III	IV	V	VI
Block 1: Demographics						
Age	.07	.02	.02	.01	-.05	-.05
Gender (male=1)	.13**	.16***	.16***	.15***	.17***	.17***
Education	.10	.07	.07	.05	.06	.02
Block 2: Personalities						
Extraversion		.07	.07	.06	.02	.03
Neuroticism		-.21***	-.21***	-.20***	-.18**	-.17***
Openness		.08	.09	.06	.04	.04
Agreeableness		.05	.05	.04	.04	.04
Conscientiousness		.21***	.22***	.22***	.16**	.14**
Block 3: Motivations of Internet usage						
Social interaction need			-.01	-.03	-.01	-.02
Pass time need			.02	.03	.03	.03
Social escapism need			.01	.01	.01	.02
Information seeking need			-.04	-.04	-.05	-.08
Block 4: Traditional media usage						
Reading books/newspaper/magazines				.11*	.05	.03
Watching TV				-.01	-.04	-.03
Listening to radio				.09	.02	.01
Watching movie				.03	-.01	-.03
Block 5: Non media-related leisure activities						
Window shopping					-.01	.00
Gathering of friends					.09	.10
Physical exercise					.16**	.15**
Playing cards/mahjong					.02	.01
Karaoke					-.02	.00
Cooking					.15**	.15**
Photography					.02	.01
Talking to family and friends face to face for more than 10 min					.03	.02
Participating in community or religion activities					.05	.06
Block 6: Internet usage						
Information seeking activities						.14*
Fun seeking activities						-.02
E-commerce activities						.05
Sociability activities						-.08
ΔR^2	.02	.14	.00	.02	.06	.01
R^2						.25
Adjusted R^2						.20

Notes: *** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$; N=415