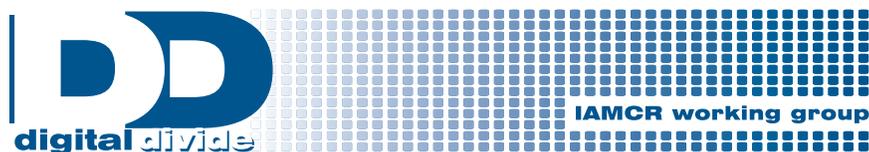


Edited by Elena Vartanova & Olga Smirnova

# Digital Divide - 2011

## Yearbook



Elena Vartanova & Olga Smirnova (eds)

## **Digital Divide 2011. Yearbook**

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## IAMCR WORKING GROUP ON DIGITAL DIVIDE: A PLEA FOR BRIDGING GAPS

The Working Group on Digital Divide (DD) was set up in 2001 at the IAMCR annual conference in Budapest. At that time eleven years ago the problem of digital divide was quite new, it turned out to be already relevant in academic sphere. Almost for all countries and regions, even at a global level the digital divide turned to be a universal problem though with different faces and complications. For Russia, the country where I come from, like for many states in Asia, Latin America and Africa it was the problem of unequal development and access of users to technologies striving from the poor economic development. For wealthier countries though who also faced technological problems the digital divide became more a cultural and usage issue. Yet, everywhere in the world the unequal access to information and communication technologies, networks and – as a result – to digital media provoked more than just individual inconveniences of people creating hard dilemmas of an economic and democratic nature.

Establishing the group in 2001 scholars agreed that the research aims of the Working Group should be the following:

- to contribute to theoretical understanding of inequality in all forms of access to information and media in the new digital environment;
- to analyze the pitfalls of new media development through the concept of digital divide for broader academic and public awareness of the new challenges brought about by the digital environment;
- to predict gaps and inconsistencies in the digital media world in the context of the technologically driven society in order to attract attention of policy-makers at national, regional and global level;
- to point to discrepancies in media and communication systems brought by ICT progress in local, national and global environments;
- to study the trends in journalism effected by parallel processes of digital revolution and digital divide in profession and relationships with audiences.

In addition to issues of research importance the IAMCR Working Group on DD targeted at promoting better communication between researchers from different countries and continents with a particular emphasis on technologically less developed or imbalanced national contexts and supporting innovative research in the field by networking established academic centers with new ones, by providing common grounds for respected and well-known researchers and young newcomers to the Academia.

Over eleven years our Working Group has been studying new phenomena of knowledge, information or digital media inequalities, their implications for a society, and the possibilities not only to merely measure the 'digital divide', but also to prevent it on the basis of the extensive analysis of national and international policies. Members of the Working Group have been examining these issues in view of the history of interrelations between society, media, technology, and their uses by audiences as well as the social implications of unequal access by the general public to the media.

Nowadays the digital divide has become not simply a proof of the imbalance between the North and the South, educated and uneducated, rich and poor, young and mature. There is a lot of evidence that as a result of the digital revolution there emerged a new generation of digital natives, or c(yber)-generation, or homo digitales. However, revolutions create not only winners, but victims as well. And who are the victims of the digital revolution? The audience not only benefits from the technological progress, but also loses in this revolution, because the reliability of the information is reduced while its volume is expanding, and it becomes more difficult and complicated for a user to understand the world without modern media skills.

The digital divide results into the emergence of digital illiterates, digitally poor. Therefore, media literacy of audiences is becoming an important part of the media of the future, and the academic community needs to explore not only the benefits that media companies could get providing more targeted information at a quicker speed, but we also have to discuss threats and challenges that the audience faces.

The subject IAMCR-2012 in Durban shows that despite the fact that our Working Group makes just a part of the overall structure of the conference, the impact of its research strategy might be forst-

ered due to the general theme of the conference which focuses on the «South – North conversations».

It should be underlined that the importance of digital divide debates due to their impact on the basic democratic values such as freedom of information and equality in access to media have always been in the framework of mainstream thinking and conceptualizing of the IAMCR conferences in previous years. The list of the conferences titles clearly proves it:

Istanbul – 2011 «Cities, Creativity, Connectivity»;

Braga – 2010 «Communication and Citizenship – Rethinking Crisis and Change»;

Mexico – 2009 «Human Rights and Communication»;

Stockholm – 2008 «Civil Rights in Mediatized Societies: Which data privacy against whom and how?»;

Cairo – 2006 «Knowledge Societies for All: Media and Communication Strategies»;

Taipei – 2005 «Media Panics: Freedom, Control and Democracy in the Age of Globalization»;

Porto Alegre – 2004 «Communication and Democracy: Perspectives for a New World»;

Barcelona – 2002 «Intercultural Communication».

The fact we live in a challenging epoch of transition from an industrial society to an information society and a radical modernization of media practices, has become a crucial. The digital revolution, which has already dramatically changed former ways and styles of life, might lead to entirely new social arrangements. Its advantages and disadvantages together with new problems that may be brought to people all over the world by global transformations, these questions have been raised by the development of information and communication technologies. In recent decades they have also become permanent topic for public discussion and scientific research. Whatever the answers to such questions may be, media and communication scholars believe that quantitative changes will lead to the emergence of a qualitatively new type of social order, an information society.

The invention and rapid development of information and communication technologies made the mass media sector an important player, producing and distributing content for democratic development of modern societies. The progress of major media technologies – cable and satellite television, personal computers, Internet

and mobile telephony – speeded up the rise of the information society, which provided new possibilities of distributing the journalistic content on an unprecedented scale and with an extraordinary speed. Thus, it happened that the maintenance of democracy and the progress of digital media in the modern society have become closely interrelated and interdependent.

The most important idea behind the concept of the information society is that not only the volume, but also the very nature of information changed the mode of life in the contemporary society. This happened because the economic growth today is based on theoretical knowledge which relies upon information in the broadest sense of the concept.

However, a long time passed before researchers realized that the information society brings about not only advantages and achievements. It also leads to the appearance of new social and cultural problems. Among them the digital divide is the central one. Along with this digital inequality, digital gaps, digital imbalance are also used. All these notions have similar meanings: limitations in the ability to obtain and to use information transmitted by new information and communication technologies. The term digital divide was for the first time publicly used by the former president of the US, W. Clinton, in 1999 to designate the unequal access of the US citizens to the digital technological infrastructure as a backbone of the information society. Nowadays the concept has become more familiar to the general public, but not everyone can adequately understand the influence it has on the development of the modern society, democracy and freedom of speech. In recent years the digital divide continues to grow, not only between countries and regions but also between social groups inside countries.

I am grateful to all the participants of the Working Group on DD who have been bringing new, important ideas, based on their personal experience and practice to the theoretical understanding of the digital divide knowledge. Our Working Group has a wide geographic representation, its members come from diverse academic and professional backgrounds. So, being the chair of Digital Divide Working Group was indisputably a great honor to me for all these years.

*Elena Vartanova*  
*Chair in Digital Divide Working Group*

# THE DIGITAL MEANS IN RUSSIAN JOURNALISTS' ACTIVITY: GENDER, AGE AND OTHER FACTORS OF USAGE

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## **Abstract**

*The article presents the first results of the research “The Digital in Journalists’ Activity in Russia”. The research is set to define which digital means of collecting, processing, creating and storing information are currently used by Russian journalists in newsrooms of the traditional and new media. Special attention is given to the influence of such factors as age groups, gender, and journalistic specialization. The aim of the research is to determine the key factors affecting the growing digital gap between the different generations of journalists and the peculiarities of the digital divide in the Russian context.*

**Keywords:** *Russian journalism, technological transformations, digital divide*

For the last decades journalism studies in Russia have focused a lot on creative, deontological, legal, and economic dimensions of the profession. However recently the nature of journalism as a profession has been substantially influenced by the technological development. That is why special attention should be paid to the impact that ICT and their consequences have made on professional journalistic culture in Russia.

1990s were critical for the Russian mass media that have been changed both qualitatively and structurally. The transformations have reshaped the profession dramatically. That’s why researches in the 90s paid special attention to new professional standards and values of journalists, and also to the factors defining the development of mass-media, changes in patterns of ownership, the legal

status, the status of mass-media and journalists, their social and professional values, and especially to problems of their freedom and independence. As the result in the 2000s the Russian journalism has taken its modern shape. This served as the background and the content for the formation of the modern professional identity by the Russian journalist seriously affected by the technological transformation in media and profession.

The article presents the first results of the research “The Digital in Journalists’ Activity in Russia”. The research is set to define which digital means of collecting, processing, creating and storing information are currently used by Russian journalists in newsrooms of the traditional and new media. Special attention is given to the influence of such factors as age groups, gender, and journalistic specialization. The aim of the research is to determine the key factors affecting the growing digital gap between the different generations of journalists and the peculiarities of the digital divide in the Russian context.

The first stage of the research conducted in spring, 2011, included polling 86 MSU students and was aimed at defining how frequently and how intensely they used digital devices depending on the following factors:

- gender,
- age,
- type of Media the respondent is employed with,
- the conditions of working with the Media.

The following respondents’ characteristics were defined in course of the research:

**Age.** The polling was voluntary and therefore various age groups took part in it. The most active participants (accounting for the largest part of the respondents) were aged 21-25 (Diagram 1).

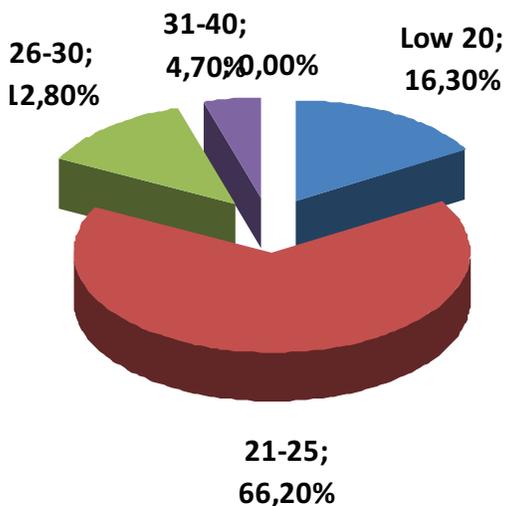


Diagram 1. Respondents' Characteristics: Age

*Gender content.* The diagram shows that female students made up about 90% of the respondents. This fact reflects the general situation at the Faculty of Journalism: through the last 10-15 years the share of male students has been fluctuating between 20 and 10%. Such feminization trends are typical of the modern Russian journalism on the whole (Diagram 2).

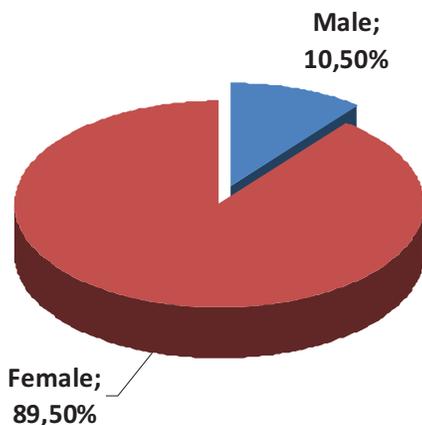
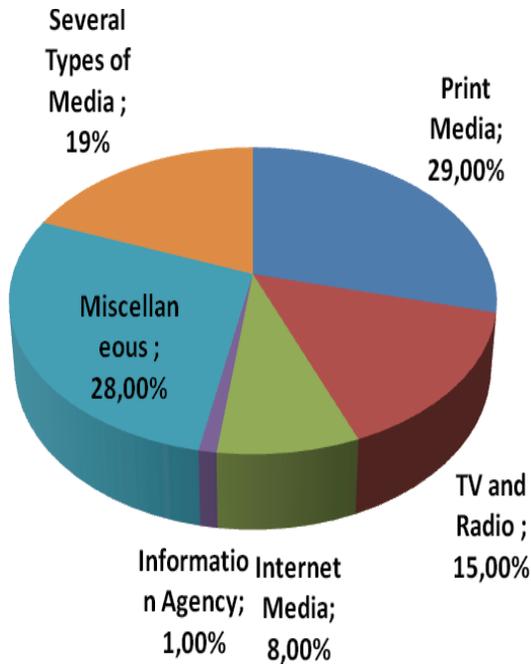


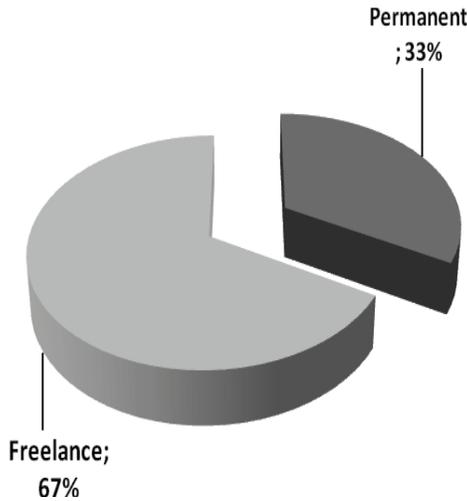
Diagram 2. Respondents' Characteristics: Gender

*Types of Media the respondents are employed with.* A significant part of about 30% work for the print Media, about 15% for television and radio, 8% work for the Internet Media. A separate group of respondents cooperating with several Media was singled out and made up about 20%. Quite a large part of respondents referred to the so-called “Miscellaneous” group, including press relation services, advertising agencies, photo agencies, publishing houses etc (Diagram 3).



*Diagram 3. Respondents' Characteristics: Types of Media the respondents are employed with*

One of the conditions the respondents had to meet to take part in the poll was their permanent or temporary *employment with some kind of Media*. It should be mentioned that the students of the MSU Faculty of Journalism normally combine their studies with a job in the Media. The situation is typical of Russia in general. Most of them do freelance, but about 33% of the respondents still have a permanent job in the Media (Diagram 4).



*Diagram 4. Respondents' Characteristics: permanent or temporary employment with some kind of Media*

Further on, I would like to present some of the research findings. It was highlighted in the poll framework that only the professional and not the personal use of digital devices would be taken into consideration.

Analysis Category “*Employing Technical Means of Communication at Work*”.

94% (that is the vast majority) of the respondents mentioned they used the Internet (including e-mail and other services) for communication. About 80% said they used mobile services.

Only about half of the respondents claimed they used wire telephones.

It should be mentioned that there was hardly any difference in answers to this question provided by male and female respondents. As for the “age” sub-category, despite the fact that the age gap was quite narrow, the answers varied greatly: only a small per cent of the respondents under 25 said they used wire telephone services.

In the *Types of Media* sub-category, the difference was even more obvious. For example, wire telephone services are used by almost 90% of the respondents employed with the press and only 3% of those working for the Internet Media.

The results in the category “*Using Digital Devices at Work*” were as follows:

*Mobile services* are used by the vast majority of respondents (about 90%), both males and females. As for the *desktop PC* position, this kind of PC is used by only about a half of all the respondents (about 40% males and 60% females), whereas *portable computers* (including laptops, iPads and so on) are used by more than 80% of the participants, with females being significantly more active users than males (86 and 67% respectively).

Among other digital devices, the most frequently used ones were digital cameras (43% of the respondents, with almost the equal share of males and females), and digital Dictaphone recorders (used by slightly more than one third of the respondents, with males being twice as active as females).

Among the least frequently used gadgets named during the poll, one can mention the hidden camera and the e-book device. The use of hidden camera was not commented upon, The poll participants who had mentioned the e-book explained that they viewed it as a very efficient tool in cases when their job involved analyzing great amounts of information and regular addressing to the same sources. The use of e-book allows one to return to the necessary data without addressing the Internet every time.

The results in the sub-category “Age” were not too impressive. However, it was determined, for example, that the oldest age group within the given poll stage (31-40 years old) used desktop PCs and portable PCs with approximately the same intensity.

Another analysis category, “*The Frequency of Using Digital Devices at Work*” revealed the following:

Most of the respondents (more than 70%) constantly used digital devices at work and simply could not do without them; about 16% used them very often. Thus, the vast majority of respondents, about 90%, demonstrated the maximum level of activity in employing digital devices for professional needs. Only about 10% said they used them seldom, an insignificant part of respondents were undecided. The option “never” was not chosen by anyone.

Finally, the last analysis category was “*The Use of Digital Devices at Different Stages of Work*”. The analysis showed that most respondents (77%) use digital means when searching for information. At all the other stages, their use is not as active. For example,

only 57% of participants said they employed digital devices when writing/preparing the Media materials.

However, in this case, male respondents demonstrated a higher level of activity, with almost 80%. The least active use of digital devices was in the aspect of communication with both information sources and colleagues: slightly above 50%, with almost the same percentage of males and females.

Thus, the key research findings have shown that the Internet remains the most important means of communication for journalists, being used by the vast majority of respondents. Mobile services are used less actively. The wire telephone is obviously losing its ground. The intensity of its use depends on the type of Media a journalist is employed with. It fluctuates between 90% and 3% of respondents working for the print and Internet Media correspondingly. Similar trends can be singled out in the use of desktop PCs: not more than a half of respondents use it at work.

The results in general have confirmed the fact that wire devices are stepping back under the pressure of mobile ones. The respondents mentioned that popularity of wire telephones and computers is fading out, they are not even installed at some offices or flats. Digital devices provide the background for journalists' mobility. They allow them to become independent from a particular workplace and at the same time to create a full-scale workplace and transmit information from wherever they are to wherever they need. Today's journalist has to be available any time, be connected to Twitter or Face book.

Digital devices have become a tool journalists employ every day, most of them simply cannot cope without them. Personal digital devices are the element a journalist cannot do without at any work stage. They allow to conduct constant news monitoring reducing the time limits spent on the information search, collection and processing, to communicate with the editorial office. However, their use is most intense when searching for information. The respondents mentioned that one of the key advantages of the personal digital devices was the opportunity to optimize information processing. Besides, it should be mentioned that the respondents sometimes viewed digital devices as an image attribute of the modern journalist and described them as a tool of success and professional growth.

Male and female journalists employ digital devices equally actively in spite of the types of media, employment conditions and so on.

Therefore, the results confirm the suggestion that young Moscow journalists have become quite advanced in their use of personal digital devices. On the one hand, this increases the efficiency of their working activity. But on the other hand, the signs of the digital addiction of journalists have been demonstrated as well.

They often become totally helpless without their digital tools and lose traditional communication skills. Some of them realize it and even suffer of it. When commenting the use of digital devices, the respondents pointed out at their drawbacks as well. In particular, they mentioned the minuses of such digital addiction:

“A laptop or a mobile got broken, and the newspaper was outrun by the competitors”,

“A journalist shouldn’t rely solely on technologies as they are not a 100% substitute for the flexible human mind” and so on.

On the whole, the research has confirmed that digital devices have become an irreplaceable tool for a journalist. However, too much exposure or addiction to the digital devices can cause great damage to one’s professional achievements. In times of the tough competition with civil journalism, with amateur users intensely employing digital tools, only the combination of professional skills and experience of a journalist and their resorting to modern technologies can bring true success and efficient results.

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# COLLEGE STUDENTS PERCEPTION OF THE SECOND-LEVEL DIGITAL DIVIDE-AN EMPIRICAL ANALYSIS

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## Abstract

*The goal of this study was to take a comprehensive measure to the second-level digital divide, along with analyzing the various factors, and finding out the prominent factors. This study comes up with the hypothesis based on three Theoretical framework of Knowledge gap theory, Use and gratifications theory, Self-efficacy and attitude theory. Based on a survey on students of Jinan University (N=302), Multiple linear regression shows that the sensibility factors of Internet use, including the attitude toward the Internet and the Internet self-efficacy, have significant positive effects on the level of Internet use, including the time of Internet use and the index of Internet use about studying and working.*

**Keywords:** *second-level digital divide; knowledge gaps; uses and gratification theory; attitude; internet self-efficacy*

## Introduction

Digital divide can be divided to two kinds: The first Internet access on the digital divide refers to the gap, known as “accessing divide”; the second-level digital divide exists between the Internet uses, known as “using divides”. Early researches focused on the digital divide in the “accessing divide”. With the increase in the penetration rate of Internet access, digital divide research has begun to transfer from the first gap to the second gap.

For the second-level digital divide, the study in western country mainly focuses on the following aspects: (1) the socio-demographic factors of Internet use. For example, Fox and Madden (2005) found



that young people tend to use more communication and interaction tools compared with other age groups based on the analysis of age between different Internet users. Based on the analysis of socio-economic status, Madden and Van Dijk (2005) found that people in high-level socio-economic status use more advanced Internet tools in order to achieve access to information, continuous learning and self-service purposes. However, the population in the lower socio-economic status tends to use the Internet as a tool for entertainment and chat (Madden , 2003; Van Dijk,2005). Compared with other populations ,Madden and Rainie (2003) found that minorities or colored population are lacking behind in the use of e-mail, access to political and health information, online shopping and so on, but leading in download music, online games and access to information on sports based on the analysis of race of nation. However, different racial and ethnic gap between the use of the Internet in undergraduate groups is very small (Jaskson, 2001; Cotton & Jelenewicz, 2006). Joy Peluchette, Katherine Karl (2008) examined students' use of and attitudes toward social networking sites. Significant gender differences were found regarding the type of information posted and whether students were comfortable with employers seeing this information. Steve Jones (2009) presents a complex picture of differential Internet use along gender lines, one that is generally consistent with the existing scholarly literature. Differential use based on race is a bit more complex. Stronger points of contrast emerge amongst White non-Hispanic, Hispanic, and Black non-Hispanic college students than they do when the respondents are grouped by gender. (2) Psychological factors of Internet use. Hamburger (2000) concluded that outward-looking men prefer to use the Internet for leisure activities, but nervous women are more like using social networking services. However, some studies found that personal factors as Internet use have little effect (Hills & Argyle, 2003). In the self-confidence, the studies have pointed out that the self-confidence in Internet use among adolescents (13-18 years old) especially in male adolescents is very important (Broos & Roe, 2006).Other studies pointed out that compared with age, gender and skills, self-confidence has a weaker influence (Livingstone & Helsper, 2007). (3) Analyzing the social network of Internet use, Rojas (2003) found that the negative attitudes of relatives and friends of using the Internet play a negative role in poor families and young people of Spain. (4) Analyzing the

skills factors of Internet use, most studies have shown that Internet age and the network frequency are important factors to affect using the Internet functions according to the analysis of the experience, (Peter & Valkenburg, 2006; Hargittai & Hinnant, 2008).

In China, the study on the second-level digital divide mainly focuses on the following aspects: (1) Using indicators to measure. By examining eight operation abilities of Internet user, Zhu Jian-hua (2001) reflected their overall Internet use skills. (2) Analyzing its influencing factors, for example, Wei lu (2008) pointed out that network knowledge had a prominent influence to the Internet use intention (Wei lu, 2008). (3) About the social influence of second-level digital divide, Wei lu (2006) pointed out that compared with Internet access, Internet use for people has a greater influence on knowledge acquisition.

In all, the western studies on the second-level digital divide have advanced the past socio-demographic situation, economic conditions and other factors, extending to various factors. However, Internet adoption and use between foreign and Chinese situation are very different, it can not be directly applied to China.

The deficiencies of research about second-level digital divide in China exist in the following areas: First, lack of detailed operational definition and measurement. Though the measurement of the first digital divide has outcome, it can not be directly applied to the second-level digital divide. At the same time, some studies have measured the certain Internet skills, but without a comprehensive measure.

Second, lack of empirical studies. There are not experience evidence in past theoretical research articles, especially lack of questionnaires, interview surveys to gather first-hand data in Chinese researches.

Therefore, the purpose of this study seeks to make up for the shortcomings of past research, select college students as an example for the empirical analysis, take a comprehensive measure to the situation of the second-level digital divide, along with analyzing the various factors, and finding out the prominent factors.

## **Theoretical framework and Hypotheses**

### *Knowledge gap*

According to the theory of “knowledge gap” in 1970, P.J. Tichenor found that mass communication might actually expand the knowledge gap among members of different social status. According to

this study, P. J. Tichenor put forward the Knowledge gap theory and pointed out that knowledge gap regarded groups' socioeconomic status as the major variables which used to study effects of media communication. He argued that with the increasing information disseminated to the society by mass media, people with different socio-economic status got the media knowledge at different levels. People with higher socio-economic status will be faster to get such information than those with low socio-economic status. Therefore, the knowledge gap between the two kinds of people will show a tendency to expand rather than shrink. The theory developed into a complete theoretical framework later. The factors affected the knowledge gap were sorted into two major inspects, that is, macro level (community, social and national levels) and individuals level (individual's subjective sense). At the macro level, socio-economic conditions will determine the existence of the knowledge gap in the different groups. For undergraduates, they neither participate in the social division of labor, nor do they have their own personal income. Therefore, their socio-economic situation correlates to their birthplace, educational level of their parents and other family-related socio-economic backgrounds. In the group with the same socio-economic status, individual factors which including education, professional knowledge of Internet will played an important role in the formation of the knowledge gap. Education is universal knowledge for a person and knowledge of Internet is specifically referred to the expertise gotten by using network. According to this theoretical framework, we conclude the following assumptions:

- Hypothesis 1: the higher their Parents' level of Education is, the higher the level of their Internet use is.
- Hypothesis 2: Students born in urban have a higher level of Internet use than those born in rural.
- Hypothesis 3: The higher the Educational level of students is, the higher the level of their ability to use Internet is,
- Hypothesis 4: The more expertise the students got, the higher the level of their ability to use Internet is.

#### *Use and gratifications theory*

Based on psychological motivation and psychological needs, Uses and gratifications theory combining psychological and sociological knowledge explains the behavior that audience use media to

meet their needs. And the theory points out the social causes and psychological motivation that made the audience to accept the media. The hypothesis of “Use and gratifications theory” hold that the audiences are active in the process of receiving the media information and that they have a variety of needs and expectations for different levels and angles of information, such as access to information, entertainment or for social activity. If some of the audiences use certain media to satisfy their needs, or the harvest exceeded expectations, then the media would have a stronger effect on these audiences. Based on Use and gratifications theory and innovation diffusion theory, Zhu (2004) put forward the study and developed a new construct of needs for new media technology, called “Weighted and Calculated Needs for New Media” to fill a gap in the literature on diffusion and uses and gratifications. WCN integrates two subtle but elaborated mechanisms underlying the adoption and use of new media: contrasting between the conventional media and the new media, and the weighting among different needs. As such, WCN predicts that individuals will initially adopt and continuously use a particular new medium only when they feel that the conventional media cannot satisfy a certain need that is important for their life goal and the new media will be able to satisfy the need. According to this theoretical framework, we make the following assumptions:

- Hypothesis 5: The less conventional media (including newspapers, radio, television, film) meet individual needs, the higher the level of students using the Internet is.
- Hypothesis 6: The more Internet meet individual needs, the higher the level of college students Internet use is.

#### *Self-efficacy and attitude theory*

Attitude is a person’s like or dislike the tendency to an object, behavior, individual, unit, event, or the detachable part of the personal world, This concept emphasis on attitude’s measurability attitude is not only a simple concept, it relate to intension, composition, direction, and other factors. There are lots of factors affecting attitude intension. For example, we can measure user’s attitude towards Internet from the measurement of the Internet importance to user’s life, work and study, the user’s attitude towards Internet plays an important role about how to use Internet and Internet self-efficacy is associated with the attitude, which both belong to the emotional concept. While self-

efficacy paying attention to the individual's confidence and judgment, researcher defined «self-efficacy» as generalization ability (Bandura, 1986), which includes: Firstly, the self-efficacy is a belief to personal ability, the emphasis of this ability lie in decision-making instead of the consequence evaluation of this behavior. Secondly, self-efficacy concerns the whole results, instead of certain skill or skill level to the whole results. Thirdly, self-efficacy concerns the evaluation about what you will be able to do in the future instead of what you have done in the past. According to the theoretical framework of self-efficacy theory and attitude, we put forward the following hypothesis:

- Hypothesis 7: For college students, the higher regarding the value on the Internet, the higher the level of Internet use
- Hypothesis 8: For college students the higher regarding the self-efficacy on the Internet, the higher the level of Internet use

## **Methodology**

### *Sample*

A research team collected survey data from Jinan universities in Guangzhou, China. The survey was administered during the May, 2010. A total of 335 respondents completed the survey and 302 are valid, the survey completion rate was 90.1%. Demographic Characteristics of sample was showed in the table 1. Obviously, the key demographic variables of this convenience sample is good (all the data in this study can be obtained from researchers after authorization) Meanwhile, the data show that the minimum of the average online time is 1 hour, the minimum net age of is1 year. Combined with the popularity of the University Internet, it can be drawn in the sample that students all have access to Internet, that is, there is no difference between access Internets, that there is no gap between the first digital divide.

### *Dependent variable*

In this study, the analysis object is college students' second-level digital divide, which is the usage gap of the Internet. Therefore, dependent variable of this research includes the following two dimensions: the time of Internet use, measurement question is that “How much average time do you spend online per day?” Internet use time is a continuous variable.

The purpose of Internet use. According to the research needs, we are mainly to focus whether the conduct of Internet use is to obtain

knowledge about learning or working. Therefore, this article uses the following questions measure: As following actions, your frequency is (1 = never use, 2 = rarely used, 3 = sometimes used, 4 = more frequently used, 5 = often used). 12A, use e-mail to learn and study work-related information; 12B, participate in online chat, discussion and learning things about life; 12C, through a search engine in Internet search and learn living-related information; 12D, visit relevant website, BBS that published professional knowledge and related to learning and living; 12E, to use blog for uploading articles about study and life. For this purpose Internet access will be directly changed into online behavior and learning, life, the extent of knowledge related to measurement. All items will add up to a subsidiary of another branch dependent variable, work-related Internet use index also belong to a continuous variable.

### *Independent variable*

Family socio-economic background variables: (1) parents' level of education. Past research showed that educational level of parents affects the acquisition of cultural knowledge of young people (Feng Xiaotian, 2005). In order to better explore the influence that the educational level of parents have on young people skills of the Internet, we take any college and above the standard level of education as standard, father or mother received any college education and higher level = 1; received any college education = 0. (2) birthplace. As the use gap of the Internet between city and non-urban becomes different, we set urban = 1, urban and rural = 0 for the assignment.

Knowledge variables, (1) Educational level (continuous variable). According to different educational levels accepted by years of education about the assignment: freshman or sophomore = 13, junior or senior = 15, master = 17. (2) The level of Internet knowledge. Internet knowledge is the expertise use of Internet, which may be related to knowledge and Educational levels or may not. Internet knowledge can be defined as a range of Internet characteristics which formed within a certain period of time (Potosky, 2007). Internet knowledge, including the daily use of the Internet is closely related to two aspects: to know what is on the Internet knowledge and what can be done through the Internet (Page & Uncles, 2004). These two dimensions can be referred to as declarative knowledge and procedural knowledge (Best, 1989; Page & Uneles, 2004). Declarative knowledge refers to the knowledge people have on the specific Internet-related terms such as Cookies, browser (browsers),



while procedural knowledge refers to the knowledge people have about how to operate the Internet to implement tasks. In this study, whether know the following knowledge or not is a measure on the declarative knowledge. A, know “worm” virus, such an Internet? B knows what is “sticky”? C, know what is Cookies? D, know what a “proxy server”? E, know what is the Internet video in the “buffer”? Know that = 1, do not know = 0. In the same way, procedural knowledge is measured by the following questions: A, know how to deal with the “worm” virus B, know how to post “top”? C, know how to use Cookies? D, know how to set the “proxy server”? E, know how to deal with Internet video the “buffer” of this phenomenon? Know = 1, do not know = 0. Support item score and then the sum of knowledge for the Internet variable value.

The media usage to meet the needs of motivational variables: (1) Conventional media (newspapers, radio, television, movies, etc.) which can meet the needs of the following areas (1 = completely satisfied; 2 = half satisfied; 3 = half satisfied, half not satisfied; 4 = most of meet; 5 = completely satisfied), the branch option A, understand the domestic and international news events; B, to obtain personal information (such as shopping, tourism, investment, medical and health knowledge); C, get the work / study information ( such as employment, education, work or study to improve the level of knowledge and skills); D, entertainment or personal hobbies (such as playing games, listening to music, sports, news); E, express their own views on a variety of public affairs; F, enhance emotional exchanges (meet new friends, maintain relationships with existing friends), the sum of the actual scores assigned to meet the audience demand for the conventional media, variable motivation. (2) Internet which can meet the needs of the following areas (1 = completely satisfied; 2 = half satisfied; 3 = half satisfied, half not satisfied; 4 = half satisfied; 5 = completely satisfied), the branch option A, about domestic and international news events; B, to obtain personal information (such as shopping, tourism, investment, medical and health knowledge); C, get the work / study information (such as employment, education, raise the level of work or study knowledge and skills); D, entertainment or personal hobbies (such as playing games, listening to music, sports, news); E, express their own views or advice on a variety of public affairs; F, enhance emotional exchanges (meet new friends, maintain and have A friend’s relationship), the sum of the actual scores assigned to meet the audience demand for Internet motivation variable.

Attitude and self-efficacy variables, (1) Attitude toward Internet. Respondents were asked the following question “how important Internet in your life, work / study?” ,which option is measured as following : most important = 5; very important = 4; indifferent or do not know / hard to say = 3; not very important = 4; unimportant = 5. (2).

Internet self-efficacy. This study used six items to measure personal confidence in their evaluation of the use of the Internet, including online activities, such as information search, and to communicate, to solve practical problems. We asked respondents to mark their statements in five Likert scale on the six degree of agreement, the greater the number the higher the extent of that agreement, of which 1 represents “completely agree” and 5 represents “completely disagree”. The specific projects: A, I am confident that I can use the web search to get the information I need; B, I am confident that through the Internet I can solve practical problems; C, I am sure the Internet is a good tool to communicate with people; D, I am confident that through the Internet I can complete something that needs to be done; E, I think that I can use Internet equipment well; F, Even there is no help, I can complete related work through the Internet. And then sum up the scores as self-efficacy variable.

Demographic variables. (1) Gender. M = 1, female = 0. (2) Age (continuous variable)

### *Data*

The dependent variable the time of Internet use, and Internet use index about learning and working of dispersion coefficient (the standard deviation of the sample data and the corresponding average ratio) 0.56 and 0.18, is larger than dispersion coefficient (both 0.08) of age and Educational level. This shows that the dispersion of the sample data is relatively large. It also said that there is a sizeable gap in Internet use level among college students (the time of Internet use, and Internet use index about learning and working), that is, relatively large second-level digital divide.

## **Results**

In this study, as the dependent variable is continuous variable, independent variable is category variables (dummy variables) or a continuous variable, the use of multiple linear regression analysis of the time of Internet use and Internet use index about learning and working as the dependent variable regression variables respectively, table 3 is as following:



Table 3 show that the predictors factors of five independent variables which are family socio-economic background variables, Knowledge variables, Using the media to meet the demand variables, Attitude and self-efficacy variables, demographic variables on college students predicts 18.5% of the time of Internet use, while predicting 20.6% of Internet use index about learning and working. Though these predictors factors are not much significance, its regression equation can be tester by F (Two regression equations' F test are significant, Sig=0.000).

However, the dependent variable in the interpretation of different time, a specific interpretation of each variable is different. According to some previous study experience, this study sets the significance level of each variable at 0.05, which is if Sig is less than 0.05, it is through the test of significance. Therefore, the time of Internet use for students, family socio-economic background variables in this group, father education (Sig = 0.50) and maternal education (Sig = 0.81) failed in the test of significance, and for Internet use index about learning and working of the result of variables, family socio-economic background variables of the father in this group education (Sig = 0.28) and maternal education (Sig = 0.13) did not pass the same test of significance, hypothesis 1 failed to pass testing. But another variable the place of birth (Sig = 0.00) toward the time of Internet use for students passed the test of significance. But the place of birth (Sig = 0.13) toward Internet use index about learning and working failed to pass the test. The place of birth in the regression equation, the Beta is 0.32, which shows that the urban student's Internet use time is longer than that non-urban. But in dependant variable, Internet use index about learning and working, the college students' birth place has not marked influence. This shows that though the place of birth may influence their online time, it does not affect their using aims, the purpose should own to other reasons. So hypothesis 2 is tested partly.

Knowledge of these variables in the educational level of college student's the time of Internet use Beta is - 0.18, Sig is 0.01. Although the significance test passed, the standardized regression coefficient was negative, indicating that the lower Educational level of the students, the more time online long, that is to use the higher level, with the hypothesis 3 in the opposite direction. Therefore, it is not through hypothesis testing, and Educational level with study, work-related Internet use index of Beta 0.11. Although positive, but the Sig is 0.11,

it did not pass the significance test, therefore, hypothesis 3 does not pass inspection. Another variable Internet professional knowledge of web-based time (Sig. = 0.19) and and Internet use index about learning and working (Sig. = 0.20) both had no significant effect due to variable, hypothesis 4 is not through testing.

Among using media to meet the needs variables, using conventional media predicts students the time of Internet use (Sig. = 0.09) and with Internet use index about learning and working (Sig. = 0.12) had no significant effect, that is to say, hypothesis 5 failed in the test. Internet use to meet the needs predicting on college students the time of Internet use (Sig. = 0.52) also had no significant effect, but with Internet use index about learning and working (Sig. = 0.01) there are significant effects, and Internet use motivation and learning to meet the demand, work-related Internet use Beta (standardized regression coefficient) was 0.17, that is, the Internet use to meet the needs of the higher motivation, students with Internet use index about learning and working higher. Hypothesis 6 was tested partly.

Attitude and self-efficacy in this group of variables, on the Internet, the impact on students the time of Internet use values in the Beta is 0.16, Sig was 0.00, meaning that students on the Internet, the higher the value of their online time more high, and it is through the test of significance. While on the Internet, college students with Internet use index about learning and working of value , Beta is 0.18, Sig is 0.00, meaning that the value of university students on the Internet, the more high, with learning, work-related Internet use, the higher the index, and it passed the test of significance. Therefore, hypothesis 7 was tested. Another independent variable self-efficacy of college students value in Internet use time, the Beta is 0.13, Sig is 0.03, meaning that the higher students on the Internet self-efficacy, the higher the the time of Internet use, and can be significantly tested; and self-efficacy variables and Internet use index about learning and working of value in the Beta (standardized regression coefficient) was 0.24, Sig was 0.00, meaning that students on the Internet, the higher the value of self-efficacy , with study, work related to the higher level of Internet use, and it passed the test of significance. Therefore, hypothesis 8 was tested.

Demographic characteristics of these variables, the gender impact of college students the time of Internet use (Sig. = 0.76) failed to pass the test of significance, with Internet use index about learn-

ing and working (Sig. = 0.01) passed the significant test, indicating that men and women with learning, work-related Internet use were significantly different; the age of the impact on college students the time of Internet use (Sig. = 0.60) failed to pass the test of significance, with Internet use index about learning and working (Sig. = 0.54) also failed to pass the test of significance.

### **Conclusion and Discussion**

Overall, the research shows that hypothesis 2 is partly through tested, which was conducted from the theoretical framework of knowledge gaps; hypothesis 6 is partly through tested, which was conducted from the theoretical framework of Uses and gratifications.

In this study, the most notable conclusion is that attitude and self-efficacy variables, which were conducted from the theoretical framework of self-efficacy and attitude theory, had a significant positive, hypothesis 7 and hypothesis 8 have been hypothesis tested. Therefore, this study shows that the sensibility factors of Internet use, including the attitude toward the Internet and the Internet self-efficacy, have significant positive effects on the level of Internet use, including the time of Internet use and the index of Internet use about studying and working.

Of course, this study has some limitations. On the one hand, while the dependent variable for the second level of the digital divide gap between Internet use, by using the division number and use of quality, but the quality will be used directly equivalent to the purpose of use, eventually attributed and Internet use index about learning and working, although analysis of the data reflected a relatively good conclusion, there's one-sided suspicion. So the future research can divide the second-level digital divide more detailed, from multiple angle measurements, and comprehensive analysis of the users of the level of Internet use between the gaps. On the other hand, the limitations of this study lie in the convenience sampling method used, which limits the conclusions of the study that can be summarized as resistance. Despite the convenience sample for the purpose of hypothesis testing is adequate, but for the conclusion of the study and to promote the wider population, random sampling is necessary.

Despite these limitations, this study made on the second division of the digital divide, especially the level of Internet use not only used to measure the time of Internet use, also used with the

Internet use index about learning and working to measure the latter directly and knowledge and increasing access to relevant, therefore it can reflect differences in the students use the Internet to acquire knowledge of the conditions and gaps, which can help students understand and reduce the second-level digital divide the analysis of significance. The other hand, data analysis, the Attitude toward the Internet and Internet self-efficacy of these affective factors appear a particularly important influence, not only developed the theory of knowledge of the digital divide, but also in practical ways for communicators to improve students using the Internet to obtain more knowledge, and second among college students reduce the digital divide and so has important practical significance.

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## Appendix

Table 1.

### Demographic Characteristics of sample

Variable	Demographic Characteristics of sample
Gender	111 Male (36.8%), Female 191 (63.2%)
Age	20 years old and less (29, 9.7%); 21-22 (115, 38.1%), 23-24 (125, 41.4%), 25 years old and beyond (33, 10.9%); Average age: 23
Educational level	Freshman and sophomore (29, 9.7%), juniors and beyond (131, 43.4%), graduate students and beyond (142, 47%)
Political position	Communist (105, 34.8%), Democratic staff (3, 0.99%), Communist Youth League (91, 30.1%), Mass (103, 34.1%)
Enrollment status	Enrollment in mainland China (199, 65.9%), Hong Kong's enrollment (66, 21.9%), Macao's enrollment (26, 8.7%), Taiwan's enrollment (5, 1.7%), other regional enrollment (6, 1.99%)

Table 2.

### The distribution of variable status (N = 302)

Variable	The distribution of variable status	
	Mean	Standard deviation
Dependent variable (continuous variables)		
Internet use time	5.68	3.19
Internet use index about learning and working	19.23	3.5
Independent variables (continuous variables)	Mean	Standard deviation
Age	22.6	1.85
Educational level	15.75	1.3
The level of Internet knowledge	6.4	3.89

Table 3.

**Multiple linear regression:  
Analysis factors of dependent variables**

		Dependent variables			
		The time of Internet use		Internet use index about learning and working	
	Independent variables	Beta	Sig.	Beta	Sig.
Family socio-economic background variables	Father education (Non-college above = 0)	-0.04	0.5	-0.07	0.28
	Mother education (Non-college above = 0)	-0.02	0.81	0.1	0.13
	Place of birth (General town and country = 0)	0.32**	0	-0.09	0.13
Knowledge variables	Educational level	-0.18*	0.01	0.11	0.11
	The level of Internet knowledge	0.07	0.19	0.07	0.2
Using the media to meet the demand variables	Motivation to use conventional media to meet the demand	-0.1	0.09	-0.09	0.12
	Motivation to use Internet to meet the demand	-0.04	0.52	0.17**	0.01
Attitude and self-efficacy variables	The attitude toward Internet	0.16**	0	0.18**	0
	Internet self-efficacy feelings	0.13*	0.03	0.24**	0
Demographic variables	Gender(female = 0)	-0.02	0.76	0.14**	0.01
	Age	0.04	0.6	-0.04	0.54
Adjusted R Square		0.185		0.206	
F		7.188		8.062	

Note: \*  $sig(p) < 0.05$ ; \*\*  $sig(p) < 0.01$

## CONTACT NETWORKS AND THE DIGITAL INCLUSION OF ISOLATED COMMUNITY MEMBERS

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### Abstract

*This paper explores the role of support networks in reducing digital exclusion for isolated individuals. We describe how ethnographic studies were undertaken in neighbourhoods in each of the four South Yorkshire urban regions of Barnsley, Doncaster, Rotherham and Sheffield, followed by interviews with residents to identify interventions that increased the probability of individuals being motivated to use the Internet. A key theme emerging was how contact networks reach isolated individuals and provide them with information; we developed this idea further through a study of carers.*

*Using findings from these studies, we consider the value of interventions through personal networks (developed and maintained by the individual) as opposed to those through formal external networks (provided by community centres and public sector groups). In conclusion, we discuss appropriate techniques for local government authorities and agencies to adopt when working to digitally include currently excluded citizens.*

**Key words:** *digital inclusion, networks, informal, public sector, isolation, carers*

### Introduction

The advent of new forms of connection brings new forms of exclusion. As cities become hubs of the Information Society, they also leave behind people who ‘don’t, won’t or can’t’ plug into the new way that business is done. As more technology is introduced, there are



more things to be left behind by. And, as a kernel of the population remains static in its (non)use of digital tools, local authorities increasingly find themselves with a commitment to bring on their residents who for one reason or another have not joined the digital revolution. Not least, there are cost implications to a section of the public who cannot access services from their phones or their computers.

The project this paper describes is a partnership between a British university and four local authorities who represent the South Yorkshire sub-region of the UK. The purpose of the project has been to provide the local authorities with an: “...Evidence based, replicable and flexible model for engaging citizens and communities with the opportunities provided by digital technologies.” (KTP, 2009).

Our work began in September 2009 and will conclude in September 2011. During our studies we identified the importance of informal, personal networks and the formal networks provided by councils, job services and other public bodies. In interviewing a sample of people learning digital skills and the digital inclusion activity staff supporting them, we gathered that both types of network played a part in motivating an interest in learning. However, in hard-to-reach populations, such networks of people meet particular challenges in fulfilling a supportive role. In this paper, we consider the role of networks in the lives of carers, whose caring commitments make attendance at training sessions in local centres difficult or impossible, and reflect on how support might be made available to assist them in keeping up to date with the opportunities provided by the internet.

Before continuing, we pause to introduce a couple of definitions that will be used in the paper. When we refer to a *carer*, we understand this to mean an adult who cares for another adult with whom they have personal relationship (i.e. husband/wife or parent/child). When we refer to a *network*, we are specifically talking about the social relations that surround individuals and which carry information, however it is mediated. We contrast this with the common use of network to refer to some kind of computing system.

### **Project Context**

The UK is amongst the World’s highest performing nations for digital inclusion (Internet World Statistics, 2010) and significant efforts have been made by the last government to reduce levels of

exclusion across the country. National programmes such as Learn Direct, UK Online Centres, Home Access and the Peoples Network have brought the UK to an enviable position. However, an estimated 9 million people in the UK do not use the internet (Office for National Statistics, 2010). Research by groups such as UK Online Centres (Freshminds, 2009) indicates that this remaining “last third” of the population not using digital technologies are proving difficult to engage. Furthermore, there are indications that amongst developed world populations, the proportion of people not using the internet seems to be ‘levelling off’ at 20-30% (Milner, 2007; Helsper, 2010).

Studies such as SIBIS (2002); Digital Inclusion Team (DIT) (2007); Sinclair et al (2007) and Dutton et al (2009), indicate that those experiencing social exclusion correspond extensively with individuals who are affected by digital exclusion amongst the following populations: young children to young adults (0-25), disabled people, older people (60+), lone parents and ethnic minorities. Furthermore, it is estimated that most people will be affected by digital exclusion due to the nature of their circumstances within the population of : asylum seekers and refugees, gypsies and travellers, chaotic families, domestic violence sufferers, children in care, individuals with severe mental health problems, substance abusers, offenders, homeless people, and the unemployed/ workless (DIT, 2007). Within these digitally excluded groups, all are at risk of falling behind in their IT access, skills and use, and with this, their opportunities to engage with cheaper, more convenient and more diverse service provision and a higher standard of living (Price Water Cooperhouse, 2009). This is aggravated, as the ICT tools available change (Light, 2011).

### **Local Project Context**

South Yorkshire (SY) has a population of 1.3 million; this represents 2% of the UK population. There are an estimated 21% of the SY population who have never accessed the internet, which is slightly above the national levels of digital exclusion (Delivery Innovation Team, 2010). Our research project is managed alongside a collective programme launched by the four local authorities called *Making IT Personal (MITP)* which aims to address digital exclusion in South Yorkshire. MITP emphasises the role of human contact networks through its skill development and knowledge share project *,Joining the DOTs‘* which provides free mentoring training to people

who are comfortable using the internet and technology and wish to pass their knowledge onto others (MITP, 2011). Their working definition of digital inclusion is: “a person knowing the benefits to them of being online and being comfortable using the internet” (Cantor, 2009).

Alongside the growth of this programme, major cuts in public funding have encouraged councils to explore reducing face-to-face services. Recent estimates suggest savings of 900 million if the whole of Britain used government services online rather than face-to-face or on the phone (Price Water Cooperhouse, 2009). In late 2010, the Race Online team published their review of Direct.gov.uk, the UK government’s central website for information on ‘public services all in one place’ (Lane-Fox, 2010). This has led to a more directed focus by the government in recent months on the advantages of public services being provided as ‘digital by default’. However, whilst saving authorities money is an obvious benefit of our research, they were very clear at the outset that the project should help to inform them of ways to encourage confident, capable users of the internet not solely consumers of public services online.

### **Research Design and Methodology**

The focus of our research project is to understand in what ways local authorities might influence the relationship someone who is ‘offline’ has with the internet. Throughout our research project, we have taken an inductive, interpretive approach. This enabled us to use qualitative methods without pre-conceptions of what we would find; we then used grounded theory analysis to assemble our findings.

Our sense that there is a point at which technology moves from being irrelevant or of mild interest to interesting and relevant emerged during a study of new learners as part of our neighbourhood study. The variety and individualised nature of their motivations showed the fundamental role of perceived relevance in determining whether someone will become motivated to learn the skills needed to use new tools. These observations are reflected in the findings of national inclusion organisations such as UK Online Centres: “Digital inclusion is a combination of motivation, access and skills, and it’s the first that’s hardest to achieve” (Milner, 2009).

Although some research exists into motivational factors in encouraging digital inclusion (e.g. Cushman & Klecun, 2006), rather

less is known about these aspects than the impact of access and skills. One reason for this is the idiosyncratic nature of much motivation. It is far easier and more cost-effective to provide for group needs than individual interest. Despite this, training may take interests into account. For instance, the popularity of teaching with genealogy materials responds to known motivations.

We might argue that curiosity is a great motivator, but different factors arouse curiosity. Further, social barriers to learning skills may override motivation to experiment. Another proposed motivator is getting (interesting) work, but other research has shown that much informal learning in UK Online centres is conducted for developmental rather than economic reasons (Cook and Light, 2006). Finally, we note that once someone starts to use resources, more potential uses become apparent to them.

### **Sample and Process**

In order to understand the specific experiences of residents within our sub-region we undertook a short stakeholder mapping exercise, identifying who was involved in developing, promoting and delivering digital inclusion activities within South Yorkshire. We identified over 250 activities within our study area (Goraya, 2010) which we shared with the project team. From there, we agreed four neighbourhoods to investigate through an ethnographic case study approach. Over the course of seven months we interviewed 45 individuals in depth, alongside a number of other brief 'off-the-record' conversations. We also spent time collecting information about the neighbourhood such as local amenities, layout of the neighbourhood, accessibility and movement of pedestrians throughout the neighbourhood and traffic flow in order to better understand how the digital inclusion activities worked and were positioned within their neighbourhoods.

Following grounded theory analysis of the interviews collected, we noted the emergence of two key networks which supported digital inclusion at a local level, informal (personal) networks such as friends, family, colleagues and formal networks such as neighbourhood regeneration boards, housing groups and third sector committees. However, certain groups including carers and single parents were not represented well in centres. The staff indicated that this may be due to insufficient support for both groups in finding alternative sources of care whilst they attend courses.

The project team agreed to investigate the needs of carers further through a small action research project. Using the findings of previous studies such as Read & Blackburn (2005) and Magnusson et al (2005) we developed an 'access intervention' project which aimed to:

- Understand the current role of personal networks in transmitting information
- Understand the current role of formal networks in transmitting information
- Understand what benefits, if any, there were to providing access to training in the home

Carers were identified and recruited through direct marketing by local groups working with carers, by the local authority contacting expert partnership representatives, and through newsletters aimed at carers distributed through by the local carers' charitable agency. The team made an offer of equipment such as laptop and tablet devices and free access to an internet connection for a year. Once recruited, each carer was interviewed by telephone in a discussion which covered their leisure interests, their interests or employment prior to caring, domestic chores, their caring duties, wider support network and current technological use. Following this, we arranged visits to three carers for intensive learning sessions in their homes with an IT tutor. Prior to the home visit, we interviewed the IT tutor's about their perceptions and intentions, and then post-visit, we interviewed them again to gauge their perceptions of the session and any recommendations.

### **Challenges**

Recruiting carers for the study took almost eight weeks and proved difficult. Despite sustained marketing over two months, we received only 14 potential volunteers. This was an early indicator of the difficulty carers have in making time to take part in activities. From the 14 names provided we managed to arrange 9 telephone interviews, 5 had to withdraw from the study due to ill health (their own or the person they cared for) and alternative commitments. Similar experiences of working with carers have been reported by Pierce et al (2009). During the telephone interviews we became acutely aware of the pressures carers faced and their perception of their

role as isolated and unsupported if not actively undervalued. The following excerpts are indicative of their attitude to the authorities with whom they interact:

*“I had a problem with my legs... I feel they [Social Services] went so far as to tell me not to go into hospital because of the impact it would have on care arrangements... It was a Friday, they said they couldn’t organise emergency care over the weekend; I’d have to wait till Monday... I had Cellulitis when I got to the hospital. The Doctor said if I’d have waited any longer they might have had to consider amputation... No, they’ve never asked how I am now...” – Carer, Telephone Interviews, 2011*

*“There are two of the, one is very nice I feel I can speak to her. The other one it’s no, I absolutely, no. I prefer it if she wouldn’t come at all, there’s no niceness about her, it’s like a bark... [After a period of illness] Every week someone from the Council comes to assess what progress you’ve made, if they don’t think you’re progressing well enough they give you ‘tips’ she told me to start making my own bed whilst I was still in a pot... I just said ‘Actually, I do what the Doctor tells me to” – Carer, Telephone Interviews, 2011*

Following the telephone interviews, we began to arrange home visits. In the end, four people (including a husband and wife) were able to take part. The visits to the carers were bespoke, matching the needs identified in the interviews with resources brought by the tutor. Each visit took a minimum of three hours.

## **Networks**

As indicated, in a number of interviews staff, learners and non-learners made reference to their human network as something which did or would have an impact on their take up of technology. In reflecting on the presence of local authorities as existing networks within the lives of carers, it is entirely through formal networks. Carers reported that often their first contact with a local authority for support came through a visit to hospital or their GP for medical treatment where a referral for social services assessment was made. However, a number of carers benefitted from support from the local authority indirectly through activities which the council partially funded, for example Age Concern carers lunches, advice groups etc. Some of the carers we interviewed were also representatives on the expert partnerships or committees set up to advise the council on subjects re-

levant to carers. In this section, we will consider the carers accounts of their networks.

### **Informal (Personal) Networks**

During our neighbourhood case study interviews personal networks had been referred to frequently by both staff and learners. People not currently online also made reference to their personal networks, with regards to the internet they were most frequently referred to for their role as enabling the non-users 'proxy use' (Dutton & Helsper, 2007) of the internet through making purchases or finding information for them or they were referred to as known individuals who would show them if asked. For the carers who took part in our study, personal networks were also a notable feature if only for their perceived absence. Whilst our sample was too small from which to draw overly general conclusions, the experiences reported by our participants echo wider findings on the impact of caring for individuals which indicate that carers feel isolated, tired, ill and frustrated, with limited leisure activities and limited support networks (CPAG, 2001; Princess Trust, 2010; NHS, 2010; Princess Trust, 2011). Personal networks were often mentioned particularly in the following contexts:

*“I thought you were phoning us up to see about our child but you were asking about all of us... We’ve enjoyed your [the researcher’s] company as we don’t have any... as I say we don’t have company, even family don’t come and see us.” – Carer, Home Visit, 2011.*

*“Our family have gone away, we rarely see friends and family, getting into most people’s house isn’t easy... We have three sons. None live far away but they don’t visit, we don’t see eye-to-eye...” – Carer, Telephone Interviews, 2011.*

However, the actual accounts given by carers of the presence or absence of personal networks did not differ greatly from the accounts given by learners and non-learners in the case study interviews of their own support networks. A number of the carers referred to family and friends being instrumental in them becoming aware of technology and the internet often as a means of providing the carer with more contact. However all of the carers we interviewed were very clear that any learning they undertook would have to fit in with their lifestyles and none felt they were able to manage learning about technology away from the home on a regular basis on top of existing commitments.

## Formal Networks

During our neighbourhood case study interviews a number of learners reflected on the role of formal networks in their inclusion, for example some had been referred to the centre by their Job Centre advisor as a condition of receiving unemployment benefits and in another case patients had been referred by the local hospital as part of their recovery package.

Formal networks were evident in the lives of all the carers we spoke with, for example in the space of one week a carer identified the following organisation representatives they dealt with:

“...Doctors, Physiotherapists, Occupational Therapists, Chemists, Secretaries, Consultants, Suppliers – for syringes, Care workers, Children’s Hospice, Psychologist – for emotional development, Dentist, Epilepsy Nurse, Motability – for the car blue badges etc, Nurses for the weekend, School, Hydrotherapy, Sensory (they’re Private), Visually Impaired team... Most are weekly or two weekly contacts, some like the Hospice are only once a month for booking dates to go in” – *Carer, Telephone Interviews, 2011.*

Yet, as this carer here reflects, for most of the carers the contact they had with formal organisations was focused on the person they cared for. Most carers had received no guidance or training on how to ‘be’ a carer, it was an assumed role based on a pre-existing relationship with the person they cared for. Carers had what we shall refer to as primary and secondary duties: primary duties are those which the carer must carry out whether they are eligible for support or not; secondary duties are those associated with support from formal networks and agencies. Those who received support in the form of paid carer visits were provided with information on training available to their staff but none were aware of any available to them in their primary duties as carer, some had received training in secondary duties such as benefit details and managing budgets. Any information regarding training or possible opportunities for them came via newsletters or charitable organisations set up to support carers but often, whether the message was received or not was as much to do with whether the carer had time to sit and read or look for it. Often, even in the midst of formal networks information filtered through by chance, as in this example:

“I was in a meeting today, just a lunch for carers – another person who was there said she would be going to another meeting after



that one just downstairs that was about budgets for people with Alzheimers or their carers, I didn't even know there was a group meeting there... Yes, it was really useful" – *Carer, Telephone Interviews, 2011*.

It is a recognised issue that for many carers their identity becomes first and foremost that of a carer. This is despite the fact that carers rarely receive support in assuming this identity nor do they have a great deal of choice in whether or not they take on caring responsibilities. For some, the concept of them as a carer is entirely one given to them by their formal associations, where they continue to see themselves as parent, spouse or friend.

This is highlighted as a key concern within Barnsley Metropolitan Borough Council's own Carer's Strategy with strategy objectives including "Carers will be supported to have a life outside their caring role and will be viewed and treated as individuals in their own right with a life beyond caring" (2010). However, Twigg (1989) reflects that the relationship of carers with agencies has historically been an uneasy one that is not always balanced fairly for either party. This is because carers represent a resource which is both a pre-supposed 'given' and yet remains within the control of the carer to remove; carers and agencies cannot work together as employee and employer but they are also not separate to one another's actions.

By their very nature, formal networks produce more formal relationships and as such, there is a risk that the carer may be treated as a professional involved within the care discussions (with the identity of 'carer'). Yet, in fact, they are performing multiple roles and as we have found here feel both a need for more personal recognition of their role in the care of their loved one and also, support in managing that role. Research indicates that access to the internet may offer carers an opportunity to develop their sense of identity as well as decrease their experiences of isolation (Read and Blackburn, 2005). It also, in the short term provides access to useful resources in their role as carer (Pierce et al, 2009).

### **Tutor support and carers at home**

As described above, to follow on from the telephone interviews visits were made to the homes of some carers where the researcher and an IT tutor delivered a bespoke training session to the carer. The training session was developed by the researcher and the IT tutor,

using information taken from the telephone interviews. During these interviews, a significant period of time was spent discussing the leisure interests, hobbies and existing networks of the carers.

The training events went smoothly with carers commenting on the usefulness of having training in the home planned around their timetable but also three of the four carers also commented that it was nice to have a visit to the home, which was for them and their interests. Although we did cover some of the topics identified in advance by the carers or the researcher, we also adapted some of the learning to fit with the carers' interests on the day. For two of the four carers, this included health information regarding the condition of the person they cared for, in both cases finding the information was more complicated for the IT tutor than many of the tasks we completed, this was due to the search terms being medical terms and the carers being unsure of spellings or specific conditions. In the case of one carer, they were particularly interested in finding this information as they currently only accessed the internet during their hospital visits on the computer in the public area.

### **Findings from tutoring**

Whilst looking for health information, the tutor didn't know how to support the learner's specific medical enquires. Studies have repeatedly shown that searching for and using health information found online is a way in which carers use the internet once they have access (James et al, 2007; Kinnane and Milne, 2010). Timmons, S. (2001) reflects there is a need to empower not just patients/ carers who are searching for medical information but also the staff who help them find or make sense of what they find.

As opposed to some studies which introduce technology and training into carer's homes, the small size of our study enabled us to cover very bespoke interests to each carer where some studies have found that basic training even in the home was not enough (Read and Blackburn, 2005). Follow up information was also sent to each carer, including those who only gave telephone interviews. In this we provided more information about the interests they had identified as well as details of local UK Online Centres near to them and public transport services to each centre. Of the carers who we spoke to after this information was sent, all stated that they were unaware that the centre we had indicated near to them existed before we gave

them the information, although they knew the buildings existed, they did not realise free computer activities took place. On our final home visit the carer asked if we could take them to the local centre to check times and information and how to get in, which we did. They reported that this made them more inclined to visit as they didn't feel they would turn up to the wrong place and waste their time.

### **Project Conclusions**

The importance of personal and formal networks in digital inclusion is of specific interest in the UK currently. This is in part because of large public sector cuts that impact on the ability to provide or support formal networks as they currently exist, and in part because of a government led ambition for the UK to become a 'Big Society'. The latter is an agenda built upon the supposition that individuals will volunteer their time to support others and strengthen social networks in this way.

At the recent National Digital Conference 2011, the Champion for Digital Inclusion Martha Lane-Fox referred to the importance of the F-Factor that is the Friend Factor (2011). This was a more personal networks focus than her speech in 2010 which emphasised a more formal networks B2B (business to business) campaign (2010). Lane-Fox also referred to the need for clearer information as opposed to multiple services without a clear branding, in order to ensure information and inclusion opportunities reached the remaining 9 million (2011). Yet despite the insistence that 'We know who they are' with regard to this final 9 million, there is no clear vision on what exactly the digital champions (an 'army' of includers) will do. Nor is it clear why it is that they are better placed to reach the remaining 9 million than previous outreach campaigns such as those by UK Online Centres or Age Concern. If local authorities are to have an impact on the inclusion of their citizens they must focus firmly on the persistent causes of exclusion.

In 2004, Bradbrook and Fisher identified what they referred to as the 5Cs Ladder of Digital Inclusion (2004) this model emphasised the complexity of digital inclusion and made clear the importance of "continuity", within the model. The 5Cs are: Connection, Capability, Content, Confidence and Continuity and they remain as relevant to the discussion regarding inclusion today as they were in 2004. If digital inclusion is to be addressed for the remaining 9 million, the challenge of providing services which make: content relevant;

develop customer and employee skills to make them capable and confident; and to provide assistance which is not a time-bound ambition (as with the Race Online 2012 campaign), must not be underestimated. Continuity must be considered, as technology develops, some groups will persist in being excluded.

Specifically, with regard to vulnerable groups such as carers local authorities should:

### **Connection**

Identify resources for providing free or low cost access to hardware, software and an internet connection in the home for all carers by using formal networks to:

- organise recycling schemes of their own computing stock
- co-ordinate local recycling schemes
- approve and allocate sufficient budget to purchase low-cost laptops such as the Get Online at Home PC from Race Online partners (2011).

### **Capability**

Develop and promote personal networks internally to:

Encourage all staff to learn more about their interests online.

Encourage all staff to complete relevant online training using UK Online Centres 'Online Basics' (2011) or BBC 'First Click' resources (2011).

Encourage all staff to share their skills with other colleagues.

Encourage staff to consider customers individual needs and interests and to share success stories with one another.

Establish links with existing learning providers such as UK Online centres within the local authority area and promote these to staff and customers.

Promote activities to networks used by carers for example hospitals and GPs or contracted care providers.

Where technology is made available to carers, review usage and impact to ensure it does not detract or distract from ongoing or developing problems in the home (Magnusson et al, 2005).

### **Content**

In the UK, local authorities' content strategies have been heavily influenced by government agendas such as e-government, T-Government and now, the 'Digital by Default' recommendations.

Currently, local authorities interactively deliver relatively few of their services online, using websites as an information delivery method only. We would encourage local authorities to:

Working with existing support groups in the local area to test new online services, for example local online centres or disability support groups.

Create interactive content wherever possible to help users navigate your services and provide the quickest point of access to receiving support possible.

Create online activities and support resources for hard to reach groups, for example the DemenShare or Lesbian and Gay Foundation Carers forums (2010; 2011) which provide bespoke and relevant information for carers with specific concerns, they also provide online space for conversations and support.

### **Confidence**

Through formal and personal networks internally:

Ensure that prior to developing and deploying any new technological services all staff are trained to a level at which they are confident not only of the capacity of the system but also of its purpose and relevance to customers.

Through formal networks externally.

Encourage staff to share their tips and experiences with others through schemes such as Joining The DOTs (2011) or by volunteering at a UK Online Centre or as a Digital Champion (2011).

Promote new services to external organisations who support customers that will use it, ensure they are comfortable and confident with promoting it.

Through personal networks:

Encourage customers to give feedback on new services and to promote them within their personal networks to those who would benefit from using them.

### **Continuity**

Through personal and formal networks: accept at a strategic management level the importance of understanding developing technologies and its role in the lives of their citizens

Commit resources to maintaining and collecting information on existing support schemes in their area such as UK Online Centres or Workers Education Course.

Actively promote the digital inclusion activities of local support schemes not only in libraries and learning centres but at service desks, at neighbourhood meetings and in newsletters to residents.

Commit resources internally to identify new trends in technology that is useful to public services and provide annual updates to executive management level.

If local authorities can establish strong formal and personal networks as part of the process of addressing the needs of excluded residents now, then we will be more likely to achieve a nation of 'true' digital inclusion such as Helsper (2009) described; where those who are offline are so because they felt able to make a choice about whether being online was beneficial to them or not.

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## FROM INTERNET USE PREFERENCE TO STRATUM IDENTIFICATION DEVIATION: RETHINKING THE “SECOND DIGITAL DIVIDE”

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### Abstract

*Beyond the accessing gap – “the first digital divide”, recent diffusion of Internet makes it more important to explore different use of Internet and its social consequence. Using Internet as one medium to cognize the world, could affect the construction of people’s subjective stratum identity, and deviate their stratum identification from the real strata. Based on China General Social Survey 2006 (CGSS2006, N=10151), this paper examined the existence of a usage gap of Internet – the use preference gap, and the effects that use preferences of Internet (informational preference, recreational preference, and balanced use) exerted on stratum identification deviation. Findings showed that, these preferences were significantly different across several demographics, socioeconomic statuses, and communication technologies adoption and traditional media use. Moreover, relations between Internet use preferences and stratum identification deviation were identified: Comparing to non-users, Internet users have greater odds of overestimating against underestimating their stratum. Users preferring recreational use tended to overestimation, but users preferring information use tended to not underestimate their stratum. The reduction of relative deprivation by using Internet has also been examined as one mediator to this phenomenon, and a partial mediating effect was found, which calls for further examinations of the mechanism between Internet use and stratum identification deviation.*

**Keywords:** *Internet, digital divide, use preference, stratum identification deviation, relative deprivation*



## Introduction

“Digital divide” has been widely used to understand and research the information-haves and the information have-nots. Besides comparing the information technology gap between countries, the digital divide research focused more on the unevenly distributed information resources among different demographics and socio-economic statuses in a special social system. However, even within people who are accessible to the Internet, difference still exists, such as the communication skills, quality and efficiency of using information technology, which is called the “second digital divide” (Hargittai, 2002). This second digital divide is a kind of usage gap, following the access gap in the “first digital divide”.

As of June 2010, China's netizens reached 420 million, and the Internet penetration rate got 31.8% (China Internet Network Information Center, CNNIC, 2010). It highlights the importance of studying Chinese Internet users' information skills, habits, and their social consequences in addition to the access equipment, technology and other material conditions. This kind of study would further the understanding of digital divide, structural inequality of information, and their social impacts.

In fact, one of the social impacts of using media is to build the imagination of social reality. At present, social and economical developments in China attract wide attention and discussion on the reformation of stratum, which might form in two paths stratum. One is the objective class determined by individual's income, power and education (e.g., Liu, 2001). The other is the subjective identification which is affected by the objective stratification, intergenerational transmission, regional differences, relative deprivation and other factors (e.g., China Academy of Social Sciences, 2004). If the mechanism of relative deprivation works, which means that people judge their own social situation through reference group, the subjective stratum identity may be partly from the reality constructed by media. Because of the rapid changes of social structure and development of information technology, people could choose their reference groups and evaluate their own social status not only confined to their propinquity, but also based on the constructed social groups and lifestyles by media.

Nevertheless, few sociological studies paid attention to the impact that the new information and communication technologies affected on people's social stratum awareness and consciousness in

China. A recent study in communication had found that in some major city of China (i.e. Shanghai), people's new media capital, including the adoption of new media and the use patterns, positively correlated with their subjective stratum identity (Zhou, 2011). This suggests that the Internet and other new media play an important role of forming people's social stratification imagination. However, Zhou's (2011) study was not yet able to disentangle the relationships among individual's media use, objective stratum, and subjective stratum identification. It also neglected the possibility that different use preference on media may differently affects individual's subjective stratum identity. Therefore, the aims of this paper are twofold: Firstly, It tries to examine the existence of the second digital divide about Internet use preference in China. Secondly, It hopes to explore how the Internet use preference by Chinese people affects their stratum identification deviation. It would connect the digital divide research in communication with the stratification issue in sociological theories.

### **The Second Digital Divide**

Since the difference of Internet adoption were found among American social groups (National Telecommunication and Information Administration, 1995), the digital divide was identified existent and among different social systems and countries, revealing the inequality of information access. After decades' studies, scholars began to call for reflection upon the dichotomized conceptualization and operationalization of digital divide as mere Internet use or not (Mossberger et al., 2003, Jin, 2003, van Dijk, 2005, Barzilai-Nahon, 2006). The "second digital divide" (see Attewell, 2001), in turn, was used to describe the difference of users' ability and using patterns, which examines the gap existed in the use of information technology within social structural predicators. As those who have the same access conditions do not necessarily follow the same preferences and the same degree to use the Internet (Hindman, 2000), the shift from the first digital divide to the second, in other words, from the access gap to the usage gap, reveals a deepening information inequality. The difference of the Internet accessing material was decreasing, but the gap of informative skill and usage, affected by social structural factors, was more heavily increasing (Natriello, 2001).

Early researchers (e.g., van Dijk, 1999) had distinguished several possible barriers that discourage people from accessing the



Internet. Besides those who have no possession of computers and network connections (material access), other barriers may include their lack of elementary digital experience caused by lack of interest, computer anxiety and unattractiveness of the new technology (mental access); the lack of digital skills caused by insufficient user-friendliness and inadequate education or social support (skills access); and the lack of significant use opportunities or unequal distribution of them (usage access). This means that merely material access does not relieve the information inequality. Nevertheless, most attentions of the public and researchers were focusing on the material access. Therefore, the rethinking of digital divide should include the users' skills of computer operation, as well as their capabilities in searching, selecting, and processing useful information from Internet. Moreover, it should also include the users' ability of improving their social position through strategically using information online. For example, the Internet Connectivity Index (see Jung et al., 2001, Loges and Jung, 2001) measured the long-term inequality formed by the Internet. Besides the traditional variables (e.g., the use frequency and duration), this index found that the digital divide was related to the different using purposes and contents of Internet.

The first and second digital divides were distinguished from the material access and usage access as a consensus (Attewell, 2001). Van Dijk (1999) proposed the usage gap hypothesis, in which, some people systematically use advanced information technologies and complex applications to serve and benefit their work and education, while others use the basic and simple ones only for entertainment. Although this hypothesis considered the differentiated use of the Internet as a result of differences in skills, and ignored the individual's free choice for personal purposes and preferences, it reflected two possible use preferences that might affect people's "life chances" (van Dijk, 1999). These two use preferences also corresponding to the instrumental and ritualized use, which has been considered as two major motivations of Internet use (Papacharissi and Rubin, 2000). In 2006, the top Internet use in China can be classified in two: one is the informational use, such as online news (53.5%), search engines (51.5%), access to information (41.0%); the other is recreational use, such as online video viewing and downloading (36.3%), instant messaging (34.5%), online music listening and download-

ing (34.4%), other file upload and download (32.9%), online games (26.6%) (China Internet Network Information Center, 2007). Therefore, this paper divided the Internet use preferences into: informational preference, recreational preference and balanced use. Here propose the research question:

RQ1: Does the “second digital divide” significantly existed in Chinese people’ Internet use preferences (information preference, entertainment preference, and balanced use)?

According to the social impact and the causal model of the differential access to information communication technology (ICT) proposed by van Dijk (2002), differences in Internet use may include income, education, age, gender, social networks, race and other substances, cognitive, social and cultural dimensions of factors at the individual level. With the findings confirmed by previous researches (e.g., Cotten and Gupta, 2004, Fox and Madden, 2005, Livingstone, 2003, Madden, 2006, Loges and Jung, 2001), this paper elaborated RQ1 into:

RQ1a: Does the Chinese people’s Internet use preferences differ significantly in different population variables including gender, age, residence, religion and ethnic group?

RQ1b: Does the Chinese people’s Internet use preferences differ significantly in different socioeconomic status variables including income, education and occupational hierarchy?

In addition, there would be technology clustering effect when adopting technologies, which means the use experience of a technology will encourage the adoption of similar technologies (e.g., Atkin, 1993, Atkin, 1995, Leung and Wei, 1998, Li, 2003). At the same time, a functional displacement effect may also exist that the audience choose to use different media according to their own needs, awareness and expectations (Dimmick, 2003). Therefore, the entertainment experience and informational experience of traditional media might encourage the recreational and informational preferences of Internet use respectively. Therefore, this paper further the research question:

RQ1c: Does the Chinese people’s Internet use preferences differ significantly in different situation of communication technologies adoptions(including telephone and mobile phone), as well as the different levels of traditional media use(including newspaper and television)?



## Internet Use and Stratum Identification

One major approach of the digital divide research is examination of the impact that the Internet had on people's life chances, including their capacity to upgrade their life (van Dijk, 1999), as well as to increase their opportunities for upward mobility or a particular form of capital (Jung et al., 2001).

Stratum is one of the core concepts in the study of social mobility (Li, 2006). In Present China, modern social stratification structure has emerged. However, improper stratification may increase the possibility of social crisis (Lu, 2002), even the fracture and imbalances within strata (Sun et al., 2004). Moreover, the study of social stratification should not only about the classification of social strata, but also to clarify its structure and relation to the social action (Erikson and Goldthorpe, 1992, Liu and Li, 2005), such as the action of using media.

Marx's (1847/1865, 1852/1876) concept of "class in itself" and "class for itself" reveals two elements of class: the conflict of material and economic interests, and the shared emotions, fantasies and ways of thinking (Liu, 2001). These two refer to the objective stratum and subjective stratum identity. According to Weber (1982), the objective stratum includes the people's market capacity and reputation (social status), power (political status), wealth and life opportunities (economic status) and other factors. Similarly, the occupational prestige (social status) also depends on the people's occupation, education, income and other objective factors (Blau and Duncan, 1967). In contrast, the subjective stratum identity is the perception of individual's own stratum (Jackman and Jackman, 1973). In fact, to understand people's social awareness and action need consider both objective stratification structure and their subjective stratum identity (Li et al., 2005). However, even though the subjective stratum identification may reflect the objective stratification (Lu and Zhang, 2006), bias could exist (China Academy of Social Sciences, 2004, Liu, 2001, Lei, 2009).

The concept of stratum identification deviation reflects the inconsistency between people's subjective stratum identity and objective stratum. Three mechanisms at least existed in explaining this deviation: the structure determinism, the changes in relative position, and the ideological constructivism (Liu, 2002). The structure determinism emphasizes the impact of the socioeconomic statuses

on subjective stratum identity (Li et al., 2005). Changes in the relative position considers institutional factors such as the prestige and power (e.g., Liu, 2001), cultural factors such as “fear of being rich”, self-reflection, moderation (e.g., Lu and Zhang, 2006, Dong, 2006), and the social interaction factors such as the setting of reference group (China Academy of Social Sciences, 2004).

However, two opposite views exist in the ideological constructivism. On one hand, Liu (2002) found that, people higher educated, who were considered to exposure more to media and information resources, did not have significant higher subjective stratum identification. Therefore, subjective stratum could not result from the ideological construction, where the public opinion of intellectuals’ reputation and superiority has long been achieved after the China’s economic reform. On the other hand, however, another study has confirmed the impact of new media use on the subjective stratum identification in China (Zhou, 2011).

From the perspective of communication, human’s adaptation to the environment is carried out through media (Lippmann, 1922). Meanwhile, as suggested by the cultivation theory, media is the source of information, ideas and awareness for audiences (Gerbner and Gross, 1976). Specifically, people will generate first-order beliefs about the facts of real world through the media, then will form second-order beliefs about their expectations and beliefs as the basis of their attitudes and actions (Gerbner et al., 1980, Hawkins and Pingree, 1990). As the Internet gradually penetrated into Chinese daily life (CNNIC, 2010), it becomes a source to form their judgments and imagination of the social stratification, and then probably produces the stratum identification deviation. Accordingly, we propose the hypothesis:

H1: There are correlations between the Chinese people’s stratum identification deviation and their Internet use.

According to Lei (2009), the stratum identification deviation would be divided into three categories: upper deviation, lower deviation, and consistent identifying. In fact, generally, Chinese people tend to deviate their stratum identification downwardly (China Academy of Social Sciences, 2004, Liu, 2001, Lei, 2009). Nevertheless, the users of new media, with income, education and occupational prestige controlled, have a higher level of subjective stratum perception (Zhou, 2011). Though it is merely subjective stratum perception rather than deviation, we extended the H1 to:

H1a: The Internet users will have significant greater odds of upward deviation of stratum identification than downward deviation, in contrast to the non-users in China.

Beyond the access gap, the usage gap such as the Internet usepreference may differently affect the netizens' access to information, forming their concept and awareness. Studies found that comparing with other specific types of online behavior (such as find sports scores, read the anecdotes, etc.), the capital-enhancing type of Internet use (e.g., search for the political or government information, career and job opportunities) may provide the users more opportunities for upward mobility (DiMaggio and Hargittai, 2002, August, Hargittai and Hinnant, 2008). Meanwhile, using the Internet as a toy rather than a tool will not benefit the career of users (Jung et al., 2001), while, though, another research suggested that the recreational use of Internet mightbenefit users' well being (Sandvig, 2001).

Although Internet use may be related to higher stratum identification, the virtual reality provided by the informational and entertaining environment differed, whichmight differently impact user's stratum identification deviation. In particular, recreational use as entertainment and catharsis, makes people more likely to overestimate their own stratums, while informational use may be more rational and diversity, thus avoid the underestimation of people's stratum. Therefore we elaborated H1 into:

H1b: The recreational preferred Internet users will have significant greater odds of upward deviation of stratum identification than consistent identifying, in contrast to the non-users in China.

H1c: The informational preferred Internet users will have significant greater odds of consistent identifying than downward deviation of stratum identification, in contrast to the non-users in China.

### **Reference Group and Relative Deprivation**

Concomitant with the increasing time-space expansion of modern social life is the "disembedding" of individuals from local, place-based orientations (Giddens, 1990; Giddens, 1991). It "lifts out" people's social interaction and relations from local contexts, andrestructures them across indefinite spans of time-space (Giddens, 1990). Similarly, the reference group theory in sociology holds that people would evaluate their social status or social behavior generally based on a real or imagined social group (Merton, 1957), which may lead to the stratum

identification deviation. Because, once people choose a real or imagined reference group in lower level, it may improve the assessment of their own. Otherwise, when people refer to a “upper” group, they will suffer psychological feeling of relative deprivation (Runciman, 1966).

With the rapid changes in social structure and the rapid development of information technology, people’s social identity is beginning to show a fragile feature. People could evaluate their social status not only within surrounding groups, but also in ideal lifestyles and reference groups learned through media. According to Wright (1960), the surveillance feature and entertainment feature of media (in this paper, the Internet) could either close people with panoramic social reality, or allow them to rest, recreate, and even be escapist or indulgent. Both features might lead people to incorporate more favorable reference group, or at least more rational and accurate reference group, thus relieve the feeling of relative deprivation.

Meanwhile, based on the foregoing discussion, individuals who are undergoing relative deprivation may underestimate their stratum – that is, with the relief from relative deprivation, the subjective stratum identification may move upward, or at least not move downward.

Therefore, opportunity of changing reference groups by using Internet might relieve the feeling of relative deprivation, which in turn ease or reverse the downward deviation of stratum identification. Here proposed last two hypotheses to investigate the potential mediating effect of relative deprivation between the Internet use and stratum identification deviation:

H2: The relative deprivation of Chinese people will be significantly reduced by Internet use.

H2a: For Chinese people with informational preference, balanced use, and recreational preference, their odds of feeling a low relative deprivation are significantly lower than feeling no relative deprivation comparing with the non-users.

H2b: For Chinese people with informational preference, balanced use, and recreational preference, the odds of feeling a high relative deprivation are significantly lower than feeling no relative deprivation comparing with the non-users.

H3: For the Chinese people feeling a low or high relative deprivation, their odds of downward deviation of stratum identification are significantly greater than consistent identifying comparing with those who feeling no relative deprivation.

## Method

### *Sample*

This paper used data from China General Social Survey 2006 (CGSS2006)<sup>1</sup>, which adopted a four-stage cluster sampling with same sample of the first three stages from the 2000 National Population Census by National Bureau of Statistics of China (NBSC), and a systematic sampling in the last stage (CGSS, 2006a). This sample (N=10151) was weighted with the demographic structure from the 2005 National 1% Population Sampled Survey by NBSC.

### *Measurements*

This paper measured Internet use preference, stratum identification deviation, and relative deprivation as independent variables. Some demographics, socioeconomic statuses, communication technologies adoption, and traditional media use were also measured as dependent or controlled variables.

### *Internet use preference*

The Internet use includes information and recreational uses, in which the first refers to the question “in your leisure time, how often do you browser the web”, and the second refers to “in your leisure time, how often do you chat or play games online” (CGSS, 2006 b, Section E, Question 38). Both answers ranged from (1) almost every day, (2) several times a week, (3) once a week, (4) several times a month, (5) once a month, (6) several times a year, to (7) never. The Internet use preference, in turn, was operationalized as the sign of difference between the informational and recreational uses in four categories: (1) nonuse (both scores were zero), (2) balanced use (no difference except the “nonuse”), (3) informational preference (the difference was positive), and (4) recreational preference (the difference was negative). The weighted percentages of the four categories are 79.69%, 9.62%, 7.63%, and 3.06%, respectively. This paper used only the sign of difference to avoid the nonlinearity of the scores of information and recreational uses that spanned non-proportionally on one hand. On the other hand, the minimal interval within each score is between “almost

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<sup>1</sup> China General Social Survey is a national survey implemented by the Department of Sociology, Renmin University of China, and Division of Social Science, Hong Kong University of Science & Technology. It has implemented in 2003, 2005, 2006, and 2008. At the time this research conducted (December, 2010), the 2008 data was still unpublished.

everyday” and “several time a week”, which is meaningful to speculate preference even if the absolute value of the difference is only one.

### **Stratum identification deviation**

The stratum identification deviation refers to the upward or downward deviation of individual’s subjective stratum identification from the objective stratum. The subjective stratum identification refers to the question “In your opinion, which does your socioeconomic status belong to (1) upper class, (2) mid-up class, (3) middle class, (4) mid-low class, or (5) low class”(CGSS, 2006b, Section E, Question 9). The objective stratum was operationalized as a categorical latent variable manifested in income, education and occupational stratum(Liu and Li, 2005). This operationalization based on latent class analysis could to some extent avoid researcher’s subjectivity in determining the objective stratum.

The individual’s income was grouped in four categories from high to low, which based on the quartiles of the last year’s total individual income (missing value was partially substituted with last year’s individual salary) within each sampling stratum (i.e. Beijing, Tianjin, Shanghai, eastern capitals, middle capitals, western capitals, other eastern cities, other middle cities, and other western cities). It is because the areal economic development differs, and stratum identification generally bases on individual’s surroundings. The individual’s education was grouped in “middle school and below”, “high school”, “adult education and junior college”, and “undergraduate and above”. The occupation strata were divided into “farmer”, “worker”, “lower-grade professionals”, “higher grade professionals” and “other” based on the class schema from Erikson, Goldthorpe and Portocarero(1979) with some combinations<sup>2</sup>.

Considering models’ Bayes information criterion (BIC) and interpretational convenience (see the note under Table 1), this paper appointed the number of latent classes as five. The objective strata were in turn ordered based on the probabilities of each latent class in categories of income, education and occupational strata (see Table 1).

Therefore, the individual’s stratum identification deviation was operationalized as the sign of the difference between the order of

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<sup>2</sup> According to Erikson, Goldthorpe and Portocarero (1979), the class schema included nine classes numbered as I, II, III, IVa, IVb, IVc, V/VI, VIIa, and VIIb. This paper corresponded “farmer” to VIIb; “worker” to V, VI, and VIIa; “lower-grade professionals” to IIIa, IIIb, IVa, IVb, and IVc; “higher-grade professionals” to I and II; and “other” includes unemployed, job finders, housewives, and students.

subjective stratum identification and the order of objective stratum including: (1) downward deviation (the difference was negative), (2) consistent identifying (no difference), and (3) upward deviation (the difference was positive). The weighted percentages of three categories were 61.34%, 25.51%, and 13.16%, respectively.

Table 1.

**Summary of latent class analysis for objective strata with five latent classes**

	Latent Classes (Objective Strata)				
	I	II	III	IV	V
Occupational Strata					
Other (unemployed, job finders, housewives, and students)	.925	.048	.005	.001	.000
Farmer	.000	.831	.049	.007	.000
Worker	.005	.112	.495	.151	.046
Lower-grade professionals	.041	.000	.384	.439	.138
Higher-grade professionals	.030	.010	.068	.402	.816
Income percentiles (from low to high)					
0-25%	.833	.439	.142	.047	.008
26-50%	.100	.438	.280	.130	.011
51-75%	.033	.104	.344	.334	.132
75-100%	.035	.020	.234	.489	.850
Education					
Middle school and below	.657	.965	.757	.052	.000
High school	.182	.034	.235	.588	.000
Adult education and junior college	.109	.002	.007	.327	.470
Undergraduate and above	.052	.000	.001	.033	.530
%	10.73	23.19	48.89	12.82	4.37

Note: AIC and BIC were used for model selection instead of  $G^2$ , which is hardly to be significant in large sample. Akaike information criterions (AICs) for models with class number from 3 to 7 were 68333.57, 67533.79, 67499.97, 67495.94, and 67507.17, while BICs for those models were 68562.84, 67841.87, 67886.86, 67961.63, and 68051.67. Therefore, models with 4, 5, and 6 classes fitted better, and the five classes model ( $G^2=50.80$ ,  $D.F.=25$ ) was adopted for corresponding the five categories of subjective stratum identification. It could be found that the five classes were ordered within their probabilities in income, education, and occupational strata.

## Relative Deprivation

The relative deprivation is the individual's sense of position in his or her reference group. This paper investigated the relative deprivation of individual's income, thus refers to the question "Considering your ability and working situation, do you think your current income is reasonable?"(CGSS, 2006b, Section E, Question 2). The answer was categorized in "no relative deprivation", "low relative deprivation", and "high relative deprivation", where their weighted percentages were 51.43%, 40.77%, and 7.80%, respectively.

Demographics, socioeconomic status, communication technologies adoption, and traditional media use.

The inequity of "digital divide" was generally investigated in different demographics and socioeconomic statuses. In this paper, digital divides of Internet use preference incorporate the differences among genders, different ages, ethnics, religions, and residences, as well as among different incomes, educations and occupational strata. The investigated ethnics included the Han, Mongolian, Man, Hui, Tibetan, Zhuang, Uyghur, and other minorities. Religions included Buddhism, Daoism, Folklore, Islamism, Catholic, Protestant, other religious beliefs, and non-religion. Residences were categorized as village, town, county-level city, prefecture-city, capital city, and municipality directly under central government. Income was operationalized as the last year's total individual income (missing value was partially substituted with last year's individual salary). Occupational strata was operationalized as same as those used in latent class analysis for generating objective strata. Education was operationalized as educational years linearized from educational levels<sup>3</sup>.

Meanwhile, digital divide is also concerned with the effects affected by formal media use. Therefore, some communication tech-

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<sup>3</sup> Based on individual's highest educational level and its completion, the education was linearized to educational years as coding "uneducated" to 0, "primary school incomplete" to 4, "primary school complete" to 6, "middle school incomplete" to 7.5, "middle school complete" to 9, "vocational high school incomplete" to 10, "vocational high school complete" to 11, "high school/ technical school incomplete" to 10.5, "high school / technical school complete" to 12, "adult education / junior college incomplete" to 13, "adult education /junior college complete" to 14, "undergraduate school incomplete" to 14, "undergraduate school complete" to 16, "graduate school incomplete" to 17.5, and "graduate school complete" to 19.

nology adoptions, and traditional media use were also incorporated in analysis. The first included adoption of telephone and mobile phone (corresponding to CGSS, 2006b, Section D, Question 38 and 40), while the second included linearized frequency<sup>4</sup> of watching television and reading newspapers (corresponding to, CGSS, 2006b, Section E, Question 38).

## Results

This paper used multi-logistic regressions to identify the effects of relevant variables, and to diagram path analysis for H2 and H3. Because of the relative large weighted sample, BIC and log-likelihoodChi-square were used as goodness of fit, while the tests of parameters were based on robust estimator of variance.

### The Digital Divides of Internet Use Preference

To answer the RQ1, demographics, socioeconomic statuses, adoption of communication technologies and use of tradition media, sequentially entered the regression predicting Internet use preference in three steps. The results of regression show evidences of both “access gap” and gaps of Internet use preference on several variables (see Table 2).

On one hand, gaps of Internet use preference exist on some demographic variables. The odds of informational preference (in contrast to nonuse) by male are only 76.4% of that by female ( $p < .05$ ). Odder people tend to be more preferential. One year of age increment increases the odds ratio between informational preference and balanced use by 7.6% ( $p < .001$ ), and increases the odds ratio between recreational preference and balanced use by 5.1% ( $p < .001$ ). Meanwhile, one year of age increment decreases the odds of recreational preference (in contrast to informational preference) by 2.3% ( $p < .05$ ). Moreover, the larger the residence, the more likely people tend to balanced use and informational preference (in contrast recreational preference) of Internet. Additionally, the use preference also varies among some religions and ethnics (detailed in Table 2).

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<sup>4</sup> The frequency “almost every day”, “several times a week”, “once a week”, “several times a month”, “once a month”, and “once a year” were linearized as 365, 156, 52, 24, 12, 6, and 0 times per year approximately.

Table 2.

### Summary of multi-logistic regression predicting Internet use preference

Independent Variables	Internet Use Preference				
	Nonuse/Balanced use	Informational/Balanced use	Recreational/Balanced use	Informational/Recreational	Recreational/
Step 1: demographics (BIC = -2630.224, Likelihood Ratio (63) = 3207.542)					
Sex: Male	0.535 ***	0.764 *	0.866	1.134	
Age	1.176 ***	1.076 ***	1.051 ***	0.977 *	
Residential Area: town	0.208 ***	1.285	0.723	0.563	
Residential Area: county-city	0.127 ***	1.045	0.487 **	0.466 **	
Residential Area: prefecture-city	0.081 ***	0.850	0.486 **	0.572 *	
Residential Area: capital city	0.062 ***	0.939	0.565 *	0.601 *	
Residential Area: municipality directly under central government	0.039 ***	0.972	0.399 ***	0.411 **	
Religion: Daoism	0.443	0.318	2.331	7.335	
Religion: Folklore	0.813	1.106	0.564	0.510	
Religion: Islamism	1.444	0.345	3.225	9.353 *	
Religion: Catholic	1.115	0.497	2.548	5.129	
Religion: Protestant	0.851	0.099 ***	.111	11.258 ***	
Religion: Non religion	1.281	0.652	0.636	0.976	
Religion: Other religions	1.336	0.822	1.179	1.434	
Ethnic: Mongolian	0.297	0.224	1.050	4.691	
Ethnic: Man	0.838	0.976	0.339	0.347	

Ethnic: Hui	1.766		1.959		0.195		0.099	*
Ethnic: Tibetan	3.909		0.319		0.000	***	0.000	***
Ethnic: Zhuang	0.949		0.688		0.706		1.027	
Ethnic: Uyghur	8.581	*	1.316		1.450		1.102	
Ethnic: Other minorities	1.788		0.887		1.458		1.644	
Step 2: socioeconomic statuses ( $\Delta BIC = -815.687$ , Likelihood Ratio (18) = 980.635)								
Income (log)	0.904	***	1.016		0.944		0.930	*
Educational years	0.734	***	1.015		0.880	**	0.867	**
Occupational stratum: worker	0.243	***	0.462		0.899		1.945	
Occupational stratum: lower-grade professionals	0.200	***	0.605		0.750		1.239	
Occupational stratum: higher-grade professionals	0.164	***	0.856		0.966		1.128	
Occupational stratum: other	0.117	***	0.566		0.612		1.081	
Step 3: communication technologies adoption and traditional media use ( $\Delta BIC = -244.881$ , Likelihood Ratio(12) = 354.846)								
Adoption of telephone	0.710		1.545		1.730		1.120	
Adoption of mobile phone	0.450	***	0.919		0.891		0.970	
Watching TV (times per year)	1.002	**	0.999		1.001		1.002	
Reading newspapers (times per year)	0.996	***	1.000		0.999		0.998	**

Note: Full model BIC = -3690.792, Likelihood ratio (93) = 4543.023, N=9545. Coefficients are exponentiated (odds ratio). Variables were controlled for next steps. The reference group of residences, religions, ethnics, and occupational strata is respectively village, Buddhism, Han, and farmer. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

On the other hand, in aspects of socioeconomic statuses, people with higher income tend to be with informational preference (in contrast to recreational preference) to the extent that increment of log income by 1 decreases the odds of recreational preference (in contrast to informational preference) by 7% ( $p < .05$ ). Similarly, people higher educated tend to less prefer information. One-year increment of education decreases the odds of recreational preference by 12% in contrast to balanced use ( $p < .01$ ), and by 13.3% in contrast to informational preference ( $p < .01$ ).

Moreover, people who read newspapers more frequently tend to prefer information (in contrast to recreational preference) to the extent that, one time increment of reading newspapers per year decreases the odds of recreational preference (in contrast to informational preference) by 0.2% ( $p < .01$ )

## Hypotheses Test

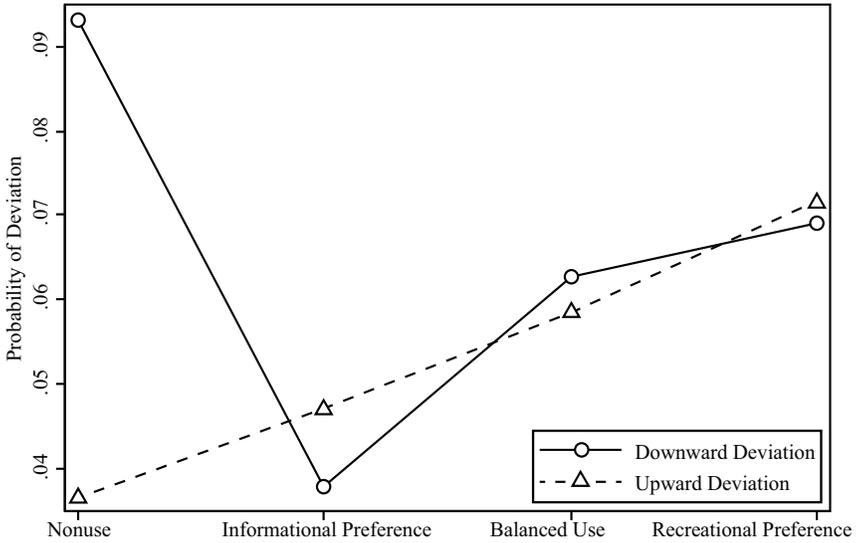
### *Internet use preference and stratum identification deviation*

The Internet use preference was used to predict the stratum identification deviation in regressions after the entering of controlled variables, which included demographics, socioeconomic statuses, objective strata, and communication technology adoptions and traditional media use (see Table 3). Though objective strata were derived from three socioeconomic variables, it is necessary to be controlled. This incorporation of objective strata may lead to multicollinearity, but would not severely distort the effects of Internet use preference, since objective strata and socioeconomic variables were merely controlled variables.

Results show that, people with informational preference, balanced use, or recreational preference all tend to upward rather than downward deviate their stratum identification, in contrast to those with nonuse. Odds of them are 3.168 times ( $p < .001$ ), 2.385 times ( $p < .01$ ), and 2.656 times ( $p < .01$ ) than people donot use Internet, thus support H1a. People with recreational preference, in contrast to nonuse, have 1.988 times odds of upward deviation than consistent identifying ( $p < .05$ ), which supports H1b. Meanwhile, within people preferred information, in contrast to nonuse, the odds of downward deviation is only 38.6% of the odds of consistent identifying ( $p < .001$ ), which supports H1c. Therefore, Internet use preference could



affect stratum identification deviation (see Figure 1) to the extent that people using Internet tends to overestimate (upward) his or her stratum identity, as well as people with recreational preference. People preferred information, however, tends to less underestimate (downward) the stratum identity<sup>5</sup>.



*Figure 1.* Internet use preference and stratum identification deviation (Figure was drawn according to Model 1 in Table 3, other variables were respectively constrained as their means.

In series of downward deviation, only the probabilities of informational preference and balanced use are significantly less than nonuse. In series of upward deviation, only the probabilities of recreational preference and balanced use are significantly greater than nonuse.)

<sup>5</sup> Actually, only recreational use and balanced use are significant on overestimation (upward / consistent), while only informational use and balanced use are significant on NOT underestimation (consistent / downward). NOT underestimation merely means greater odds of consistent identifying than downward deviation, which not means overestimation.

## Relative deprivation

For H2 and H3, Internet use preference was used to predict relative deprivation, while both relative deprivation and Internet use preference were used to predict stratum identification deviation. In models, demographics, socioeconomic statuses, objective strata, and adoption of communication technology and use of traditional media were controlled sequentially in four steps. Lastly, path analysis was diagrammed from the two models.

On one hand, results show that Internet use could reduce relative deprivation, though in different extent (see Model 2 in Table 3). For people with informational preference, balanced use, and recreational preference, the odds of feeling low relative deprivation are only 70.9% ( $p < .001$ ), 66.6% ( $p < .001$ ), and 63.1% ( $p < .01$ ) of those feel no relative deprivation, in contrast to people do not use Internet. Thus H2a is supported. Meanwhile, For people with informational preference, in contrast to those do not use Internet, the odds of feeling high relative deprivation is only 36.3% of feeling no deprivation ( $p < .001$ ), which partially supports H2b (both pro-entertainment use and nonuse have no significant effect on reducing feeling of high relative deprivation, see Model 2 in Table 3). Therefore, Internet use could reduce low relative deprivation, but only informational preference could reduce high relative deprivation.

On the other hand, relative deprivation has effect on downward deviation (see Model 3 in Table 3). For people feeling low and high relative deprivation, in contrast to those feel no relative deprivation, the odds of downward deviation are 2.109 times ( $p < .001$ ) and 3.882 times ( $p < .001$ ) than the odds of consistent identifying. Therefore, H3 was supported. In fact, the odds ratio between upward deviation and consistent identifying, as well as that between upward deviation and downward deviation, leads to similar conclusion (see Model 3 in Table 3).

**Table 3.**  
**Summaries of multi-logistic regressions predicting stratum identification deviation, relative deprivation, and stratum identification deviation (with relative deprivation controlled)**

Independent Variables	Model 1 – SID <sup>1</sup>				Model 2 – RD <sup>2</sup>				Model 3 – SID <sup>3</sup>			
	Downward/ Consistent	Upward/ Consistent	Upward/ Downward	Low / Non High / none	High / none	Low	High / Low	Downward/ Consistent	Upward/ Consistent	Upward / Downward	Downward / Downward	Upward / Downward
Step 1: demographics	BIC = -241.308 Likelihood ratio (42) = 625.548				BIC = 254.704 Likelihood ratio (42) = 126.435				BIC = -342.298 Likelihood ratio (42) = 722.978			
Sex: Male	1.320 ***	0.710 ***	0.538 ***	0.937	0.929	0.991	1.306 ***	0.638 ***	0.489 ***			
Age	1.000	0.998	0.998	1.001	1.009 *	1.009 *	0.997	1.011 **	1.014 ***			
Ethnic: Mongolian	2.355	1.997	0.848	0.991	1.571	1.585	2.236	1.93	0.863			
Ethnic: Man	1.570	1.371	0.873	0.973	0.975	1.002	1.706	2.058	1.206			
Ethnic: Hui	1.544	0.445	0.288	0.822	0.995	1.211	2.142	0.138 *	0.065 *			
Ethnic: Tibetan	1.212	0.861	0.710	0.637	2.688	4.221 *	1.185	0.937	0.791			
Ethnic: Zhuang	1.774	1.106	0.624	3.148 ***	3.774 **	1.199	2.053 *	1.169	0.570			
Ethnic: Uyghur	0.428	1.176	2.746	0.262	0.27	1.029	0.472	0.445	0.944			
Ethnic: Other minorities	3.127 ***	1.276	0.408 ***	0.979	0.819	0.837	3.018 ***	1.314	0.435 **			
Religion: Daoism	1.545	0.559	0.362	0.482	1.183	2.453	1.536	0.586	0.382			
Religion: Folklore	0.981	0.837	0.853	1.145	0.658	0.575	1.112	0.749	0.673			
Religion: Islamism	0.943	2.651	2.811	2.445	1.452	0.594	0.985	7.855 *	7.972 *			
Religion: Catholic	0.442	0.795	1.801	0.51	0.565	1.108	0.466	0.638	1.370			
Religion: Protestant	1.396	0.729	0.523 *	0.998	0.736	0.737	1.395	0.690	0.495 *			
Religion: Non religion	1.101	0.704	0.640 **	1.115	0.926	0.830	1.153	0.698 *	0.606 **			
Religion: Other religions	0.373	0.640	1.719	1.37	0.61	0.445	0.415	0.783	1.888			
Residential Area: town	1.791 ***	0.845	0.472 ***	0.894	1.477 *	1.652 **	1.869 ***	0.739	0.395 ***			
Residential Area: county-city	1.804 ***	0.538 ***	0.298 ***	1.108	1.513 **	1.366	1.943 ***	0.43	0.221 ***			

Continuation table 3

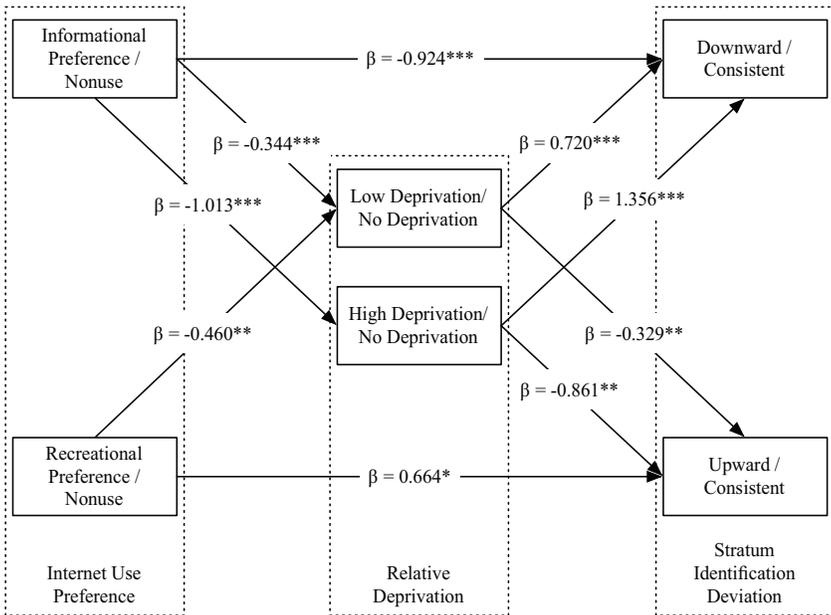
Independent Variables	Model 1 –SID <sup>1</sup>			Model 2 –RD <sup>2</sup>			Model 3 –SID <sup>3</sup>		
	Downward/ Consistent	Upward/ Consistent	Upward/ Downward	Low/ Non	High/ none	High/ Low	Downward/ Consistent	Upward/ Consistent	Upward/ Downward
Residential Area: prefecture-city	2.254 ***	0.505 ***	0.224 ***	0.978	1.766 ***	1.805 ***	2.378 ***	0.348 ***	0.146 ***
Residential Area: capital city	2.268 ***	0.616 **	0.272 ***	1.06	2.059 ***	1.943 ***	2.424 ***	0.209 ***	0.086 ***
Residential Area: municipality	3.397 ***	0.787	0.232 ***	1.123	2.05 ***	1.825 ***	3.614 ***	0.447 *	0.124 ***
Step 2: socioeconomic statuses	$\Delta BIC = -2920.18$ Likelihood ratio (10) = 3011.669			$\Delta BIC = -289.911$ Likelihood ratio (4) = 253.612			$\Delta BIC = -1967.988$ Likelihood ratio (12) = 2076.754		
Income (log)	0.913 ***	1.017	1.114 ***	0.892 ***	0.83 ***	0.931 ***	0.901 **	1.021	1.133 ***
Educational years	1.014	1.044 **	1.030 *	0.977 *	0.959 *	0.981	1.016	1.017	1.001
Occupational stratum: worker	1.448 ***	0.127 ***	0.087 ***	1.11	1.058	0.954	1.499 ***	0.137 ***	0.091 ***
Occupational stratum: lower- grade professionals	1.342 ***	0.113 ***	0.084 ***	0.824 *	0.689 *	0.836	1.414 **	0.122 ***	0.087 ***
Occupational stratum: higher- grade professionals	2.740 ***	0.179 ***	0.066 ***	0.774 *	0.593 *	0.767	2.864 ***	0.215 ***	0.075 ***
Occupational stratum: other	0.000 ***	1.774 ***	7.6E+15 ***	0.834	0.696	0.835	0.000 ***	1.838 ***	2.4E+15 ***
Step 3: objective strata	$\Delta BIC = -286.08$ Likelihood ratio (8) = 359.277			$\Delta BIC = -21.386$ Likelihood ratio (6) = 32.612			$\Delta BIC = -311.310$ Likelihood ratio (2) = 329.438		
Stratum II	665.1 ***	0.000 ***	0.000 ***	1.296	0.69	0.533	2.04E+20 ***	5.57E-12 ***	0.000 ***
Stratum III	2353.9 ***	0.000 ***	0.000 ***	1.165	0.657	0.564	6.07E+20 ***	1.81E-12 ***	0.000 ***
Stratum IV	12649.7 ***	0.000 ***	0.000 ***	0.782	0.423	0.540	3.04E+21 ***	7.29E-13 ***	0.000 ***
Stratum V	139118 ***	0.000 ***	0.000 ***	0.539	0.126	0.233	3.03E+22 ***	4.08E-31 ***	0.000 ***
Step 4: Adoption of ICT and use of traditional media	$\Delta BIC = -57.196$ Likelihood ratio (8) = 130.384			$\Delta BIC = -16.103$ Likelihood ratio (2) = 2.046			$\Delta BIC = -55.092$ Likelihood ratio (10) = 145.730		
Adoption of telephone	0.950	1.213	1.277 *	0.952	0.922	0.952	0.924	1.202	1.300 *
Adoption of mobile phone	0.676 ***	1.323 *	1.956 ***	0.805 **	0.860 **	1.106	0.669 ***	1.197 ***	1.703 ***

Watching TV	0.999	1.001	1.001	1.001	**	0.999	*	0.999	1.000	0.999	1.002	**	1.002	***
Reading newspapers	0.999	***	1.001	1.002	***	1.000	***	0.998	**	0.999	*	0.999	***	1.002
Step 5 (Model 1, 2): Internet use preference (IUP)	$\Delta BIC = -43.779$ $Likelihood\ ratio\ (6) = 98.691$ $\Delta BIC = -31.549$ $Likelihood\ ratio\ (4) = 58.561$													
Informational	0.386	***	1.223	3.168	***	0.709	***	0.363	***	0.512	**	—	—	—
Balanced	0.665	**	1.587	*	2.385	**	0.612	***	0.619	*	1.011	—	—	—
Recreational	0.749	—	1.988	*	2.656	**	0.631	**	0.839	—	1.329	—	—	—
Step 5 (Model 3): RD and IUP	$\Delta BIC = -356.432$ $Likelihood\ ratio\ (5) = 401.751$													
Low relative deprivation	—	—	—	—	—	—	—	—	—	—	—	—	2.109	***
High relative deprivation	—	—	—	—	—	—	—	—	—	—	—	—	3.882	***
Informational	—	—	—	—	—	—	—	—	—	—	—	—	0.397	***
Balanced	—	—	—	—	—	—	—	—	—	—	—	—	0.707	*
Recreational	—	—	—	—	—	—	—	—	—	—	—	—	0.754	**

Note: Coefficients are exponentiated (odds ratio). Variables were controlled in next steps. In order to improve the goodness of fit, variables that were insignificant in Wald test were constrained to 0 in next steps. The reference group of residences, religions, ethnics, occupational strata, objective strata, relative deprivation, and Internet use preference is respectively village, Buddhism, Han, farmer, Stratum 1, no relative deprivation, and nonuse.

<sup>1</sup>SID is stratum identification deviation. Full model BIC = - 3548.575. Likelihood ratio (74) = 4225.569, n = 9401. Parameter of age was constrained to 0 from step 2. <sup>2</sup>RD is relative deprivation. Full model BIC = - 63.010, Likelihood ratio (46) = 469.175, n = 8732. Parameters of sex and religion were constrained to 0 from step 2. Parameter of age from step 3, parameters of education and objective strata from step 4, and parameter of adoption of telephone from step 5, were all constrained to 0. <sup>3</sup>Full model BIC = -3033.120, Likelihood ratio (71) = 3676.651, n=8637. Parameters of age and education from step 3, and parameter of adoption of telephone from step 5 were constrained to 0. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Therefore, H2 and H3 reveal a partial mediating effect of relative deprivation on Internet use preference to stratum identification deviation. This paper adopted log odds ratio as path coefficients and diagrammed the path analysis in Figure 2.



*Figure 2.* Path analysis of Internet use preference, relative deprivation, and stratum identification deviation (The path coefficients are log odds ratio. Demographics, socioeconomic statuses, objective strata, and adoption of communication technology, as well as use of tradition media were controlled).

## Discussion and Conclusion

As a source for people to understand the real world, the Internet may help them to construct subjective awareness and imagination of stratum, and deviate their subjective stratum identity from the objective stratum. In this paper, the existence of a usage gap of Internet – the use preference gap, was preliminarily confirmed based on the data from CGSS2006. Moreover, the significant relations between

Internet use preferences and stratum identification deviation were found. The reduction of relative deprivation by using Internet could be one partial mediator to this phenomenon.

Specifically, this study found that the “access gap” of Internet still significantly existed at the time of the implementation of CGSS 2006. There were significant differences of Internet use preferences among different demographics, socioeconomic status, communication technology adoption and use of traditional media, such as: women were more likely to prefer informational use than men; preferential internet use, especially the information preference, was increasing with the age; and the size of residence, income, education and frequency of newspapers reading would reduce the recreational preference in varying degrees. It is to say, the “second digital divide”, namely the usage gap of Internet in China, was widespread existing with the differences of Internet use preference. This is consistent with the positive and goal-oriented users in the “uses and gratifications» paradigm (Katz, 1959), which means, the Internet use preference is more likely to be a personal choice rather than a consequence of lack of skills. For example, the online informational preference is more likely to be the extension of the news content preference of the newspaper audience offline. Similarly, these preferences are rather a result of the technology clustering than the Internet’s functional displacement as Dimmick (2003) commented to traditional media. Therefore, even though the Internet penetration rate increases in China, the differentiations of Internet use preference might still inherit and aggravate inequality from demographics and socioeconomic statuses. It is consistent with the finding of previous studies (e.g., Jung et al., 2001).

There are significant relations between the Internet use preferences and the stratum identification deviation. Overall, compared to non-users, Internet users have greater odds to deviate upward than downward, which supports the positive effect of new media use on increasing the subjective stratum identification. It suggests that the Internet may be not only the users’ source to get information, concepts, and awareness (Gerbner et al., 1980), but also a constructive factor impacting users’ stratification imagination (Zhou, 2011). More specifically, in terms of two preferences, the users with recreational preference will be significantly more likely to overestimate their own social stratum, while the information preferred users

will be less likely to underestimate their class. It also suggests the surveillance and entertainment function of media in differently constructing virtual reality (Wright, 1960), which, though, have similar direction in reducing the relative deprivation. Using Internet was able to reduce users' low relative deprivation, but only the informational preferred use could be able to reduce the high relative deprivation. Meanwhile, relief from relative deprivation also ease the downward deviation of stratum identification. This conclusion confirms the "changes in the relative position" mechanism in forming the subjective stratum identity.

Noting that, controlled variables (i.e., demographics, socioeconomic status, and objective stratum) remain the high power in explaining the stratum identification deviation, which indicate that the subjective stratum identity is still largely constrained by the social structural factors.

In summary, the study confirmed and complemented the relationship between Internet use and subjective stratum identification in China. It to some extent explained the direction of stratum identification deviation through two distinct Internet use preferences, and increased the understanding about the mechanism of how media affected the subjective stratum identity. Theoretically, three mechanisms of the subjective stratum construction got supported (i.e., structural determinism, changes in the relative position, and ideological constructivism), especially the last one. In the practical level, forming from social structural factors, the digital divide could be further involved in the reproduction of imaginal stratum, and then potentially reshape the social stratum (Zhao, 2008). According to the cultivation theory, the "virtual reality" shaped by media, beyond the objective reality, might be the basis of social members' attitudes and actions (Hawkins and Pingree, 1990). Therefore, following the Marxist concept of class-consciousness, the digital divide is not only a production of information inequality, but also might recycle new rounds of social stratum reproduction and of social inequality.

The shortcomings of this paper are threefold: First, the data used, CGSS2006, measures the Internet use rather simply (i.e., the use frequencies of "browsing information" and "online chat, play games"), which cannot meet the involved environment of Web 2.0, especially the rise of social media applications. In this regard, this paper roughly built the "use preference" in order to ensure the



research reliability, which, however, may decrease the measurement validity. Secondly, the mediating effect of relative deprivation between Internet use preference and stratum identification deviation is partial, which calls for further examinations of this phenomenon. Those unexplained effect might need further elaborations of the content and the social effects of Internet. Future studies could pay more attention to the phenomenon and explanation in accordance with the “cultivation theory” paradigm, assisted with content analysis of Internet information, and more elaborative definition of Internet use. Meanwhile, whether the online chat, games, and other forms of multi-user network applications could enable users to increase more social ties, and to expand their online social capital (Zhao, 2006) as some ways to provide alternative reference group, or are just as a pastime or anesthesia, allowing users to wallow in it, namely the “amusing ourselves to death” (as described by Postman, 1985) This kind of theory construction and development of mechanisms still need to be furthered.

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## COMMUNITY ‘CULTURAL JOURNALISM – PB’: STUDY OF EVERYDAY LIFE IN THE TRIBE OF BRAZILIAN JOURNALISTS IN ORKUT

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### Abstract

*This paper shows a synthesis of the author’s Masters thesis held in the Postgraduate course in Communication and Media Culture at the Federal University of Paraíba (UFPB) in Brazil. The research aims to investigate the new forms of sociality mediated through social networks, notably, the proposed study of a specific tribe of the social network Orkut, the online community Cultural Journalism – PB, formed by users interested in talking about the practice of journalism specializing in the local context of state where the research was developed at Paraíba.*

**Keywords:** *sociality; tribalization; social networks; orkut.*

### Introduction

There have been important changes in the forms of human interaction during the history of culture. The development of technical facilities and the expansion of the media have promoted the emergence of new forms of social organization such as the telegraph, radio, cinema and television, which are all examples of how the media has shaped specific aspects of social life.

In pre-industrial times, interpersonal communication and traditional media were quickly progressing and changing. Today we have found a style of social cohesion in which individuals are interdependent, especially in relation to the sharing of knowledge. This common spirit has weakened with the invention of writing and later with the appearance of the press. Concurrent with the emergence of



nations there was a process of “detrribalization” that emphasized an individualized lifestyle.

However, in the age of social networks, when the experience of information exceeds the limits of time and place, the Internet has taken over for many different forms of communication. Now virtual communities are everywhere, setting up new forms of tribes designed in many instances of everyday life.

In the case of journalism, from the downbeat of the print media, we observe that this is a practice that has specialized interests in various newsletters. Today, when it comes to network communication, it is perceived as an expansion of supply for specific demands such as “cultural journalism.”

In this context, the advancement of technological-communicational resources favors the interests of users in search of stories relating to culture. The computer-mediated interactions mainly benefit the formation of groups that share interests around cultural events.

It is in this direction that we intended to investigate cultural journalism in the information age, as observed through the Internet and the installation of virtual communities, whose members gather intrigued by topics related to this specialized journalism.

### *Community Cultural Journalism – PB*

In the universe of connections and relationships proliferated by social networks, exists a virtual community titled *Cultural Journalism – PB*. This is one of the 996 virtual groups linked to the theme of «journalism» on the Orkut network, which was founded on the 24th of January 24, by the Turkish engineer from Google called Orkut Büyükkokten.

Providing tools for social interaction and creating new friendships, Orkut has installed itself as the largest social network with the participation of Brazilians. This number actually exceeds 43 million users, of which 28 participants associated with the community investigated this project.

It is noticed that Orkut has a differential related to the issue of identification of participants, compared to the other possibilities of social interaction offered by the Internet such as blogs, chats, fotologs, email and instant messaging programs like «Messenger» or «Google Talk.»

Only through the object contemplated in the present research, users who receive invitations to join the network have the ability to

bind to different social groups. Through this link, they can interact with other participants who have an affinity with their profile or have interest in a common theme.

From this interactive channel opened by the Orkut communities, away from the mediation characteristic of the media, it was noted how journalists who participate in the community *Cultural Journalism – PB* are a group of discourse that reveals new ways of talking about journalism through internet media.

From this sample, we observed the forms of organization of everyday discourse of journalists from the establishment of a model of tribalism. A phenomenon that is not so recent, but has accompanied man since the beginning of time, when he already needed to go beyond a simple demonstration to connect to form groups of people with ideas, preferences or profiles of mutual interest.

### **Methodological procedures**

In order to analyze the phenomenon of tribalization of journalists in the virtual community in question, as a methodological procedure, an exploratory research was adopted, conceptualized by Gil (2002) as a way to provide greater familiarity with the problem.

The review was based on interdisciplinary literary material, including books, journals, papers, films and websites, which mostly related to the field of cultural trends media.

In this way, the research was divided into two parts. Firstly, there was a theoretical review about the evolution of media and its interface with social relations. Then, an analysis of the subjects's discourse in the Orkut Media was made. As this network historically and popularly preceded the phenomenon of collective use of social networks, over time assimilating the influences of the networks that succeed it as Twitter and Facebook, we chose a dialogical approach, that can confront discourses and languages like mirrors that accelerate social change.

The empirical *corpus* of this research was composed of posts published in the community *Cultural Journalism – PB* on Orkut. This has analyzed posts since the period of its creation, between 22 May 2006 and 15 March 2011. Based on the analysis of the profiles of community members and the materials posted during this time, also considering the existence of other networks and related communities, we investigated the dynamic of social and symbolic exchanges that often aren't perceived in our day to day lives.

Inspired by the analysis of this extract, we intend to show by means of common social exchanges that come to pass unnoticed in our daily lives, the motivations that lead postmodern beings to form new types of tribes so common in most ancient civilizations.

## **Social Networks**

The internet social networking participant interacts in real time with users from all over the world. Their wish is to engage in and encounter groups in which there are elements of identification and belonging, probably not even aware that this practice meets the need to approach the other which is rooted in their earliest ancestors.

This need for interaction is an inherent characteristic of the human being and promotes the formation of groups with ideas, preferences and profiles together, forming what Michel Maffesoli (2006) called tribalism.

Virtual communities are examples of contemporary tribalism, through which members come together in a comprehensive worldwide deterritorialized space to talk about their experiences, desires and tastes in many different subjects. There are discussion groups that range from issues relating to professional, academic, political, economic, artistic, personal and collective projects, to more ephemeral topics, like product brands, feelings, places and situations.

However, you don't always need to connect your computer to recognize the formation of the tribes. Radio or television programming already seems increasingly segmented, targeted at a specific audience. On the streets multiple urban tribes can be seen, in which participants identify themselves by their manner of dress, jargon and slang, the way they express themselves in art, gestures, postures and graffiti, leaving their mark on the architecture of the cities.

But are the tribes gathered in raves, dancing to the sound of electronic music, driven by the same compelling drive of the indigenous, when they danced to the sound of hand crafted instruments? What do the *emos*, who paint their young eyes black and listen to *melodic hard core*, have in common with the face-painted politicized, who took to the streets to fight for the impeachment of former Brazilian president Fernando Collor?

What is the relationship between the information entered into the caves by primitive societies in order to perpetuate their traditions to later generations, and progress in the immediate trans-

mission of data from a mobile phone in Brazil to an apparatus in Japan?

This set of questions in their apparent dispersion updates a debate about human beings and new telecommunications networks. If man through technology, has managed to break geographical and temporal boundaries, becoming so independent of each others access to information, why does he still feel the need to meet his peers in forming new styles of tribalization?

### **Modern individualism versus postmodern tribes**

Epic conflicts of individuals reflects one of the particularities that distinguishes man from other living beings: the capacity for domination of technique. Human intelligence and sensitivity were important elements throughout the ages to create and use tools that met their immediate needs. Firstly, in order to attend the basic necessities, such as the creation of clothes, home appliances and the production of fire.

Other techniques such as writing appeared to track human evolution. Then, modern developments led to an extremely machine-focused culture as a consequence of the Industrial Revolution of the 18th century. And in more recent times, the establishment of new functional systems came to reinforce the continuity of evolutionary technique, when computers came to calculate, operate and think instead of men.

This reflected the impact of technological advances, not only in the physical and intellectual abilities of individuals. Belief in the electronic wonders and charms of modernity – such as the disruption of patterns and dissolution of dictatorial institutions – created a scientific gap on the other hand. According to Bauman (2005) now human relationships are becoming increasingly fragile and ephemeral, leaving a gap in the emotional satisfactions of each individual.

However, technology, with its ability to create dependency and supply needs, offers solutions to this issue, opening several possibilities of virtual relationships through social networks like Orkut, Facebook, YouTube, Twitter and the blogosphere.

McLuhan (1969) had already warned that modern individuals were quickly approaching the final phase of the extensions of man, as it developed the technological simulation of consciousness. However, the same author, who blamed the development of writing and

later the press largely on the emergence of an individualistic culture, provides a new twist created by the networks.

According to his ideas, telecommunications and new technologies would be potential ways for the reunification of individuals, especially the audiovisual nature that sharpens senses more immediate senses, allowing the reconstruction of a network society – the famous “Global Village”, which is explained as a collective human experience, with the shared and undifferentiated feeling of the first tribes.

This imagined “Global Village” actually comes to fruition in small tribes with groups of individuals attracted to various elements of identification on the scale of a large network. The increasing use of this term, by itself, attracts attention in these times of computer communication, being an example of the emergence of a new configuration of human relationships.

Like us, people constantly connected, who spend many hours of our daily lives in front of the computer, it is natural that the refuge to resolve our emotional needs consists of various identity groups in the social networks.

This extension of affections in social networks can be registered through comments, criticisms or statements exchanged on Orkut, Facebook, Youtube, Twitter, blogs, email correspondence, private conversations in chat rooms and even by virtual sex.

Unlike the physical reality, that along with the pleasures of face to face contact offers risks of misunderstanding, disappointments and difficulties in understanding, hazards appear minimized on the network. There, to link or to unlink partners, communities or social networks only requires a click, as we noted in the analysis of the community *Cultural Journalism – PB*.

### **About the analysis**

The analyses of the community *Cultural Journalism – PB*, of the Orkut social network and its relations with the other networks have become a surprise during two years of research. From the analysis of users' profiles, their discourses and related communities we see a transience of participation and interaction among group members.

If, on the one hand, the former participant brought with them some of the posts that serve as our empirical corpus, on the other hand, this call alerted us to the characteristic features of the new network, such

as nomadic tribal. While the ancient civilizations went beyond their boundaries in search of survival, the generations of today follow the trail of sensory experiences, speed, knowledge and affections.

But at the same time that the virtual communities become ephemeral, they are a fundamental object of analysis, as the dynamics of network experience show. Just as the community *Cultural Journalism – PB* appears to discuss the journalistic production in Paraíba – although it has dispersed its initial goal over time – we have seen cases where a video of the mass media, specifically television, fell into the social networks and so generated a great preposterous discussion in cyberspace. This debate, in turn, returned to analog media, demonstrating the feedback process characteristic of postmodern media.

The examples above showed a post-journalism, a new kind of journalism expert who reinvents himself in step with the transformation of one's own cultural experience in the information age. Through this process of convergence and communication techniques, the role of journalists suffers mutation in its forms of production and dissemination of news to reach the demands of new times.

Finally, we realized that although social networks have not yet had a revolution in terms of community experiences, existing communities indicate new styles of subjectivity (citizenship) and sociability (democratization of public space) that exceed limits never before imagined by the tribes of our predecessors.

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# DIGITAL POSSIBILITIES AND SOCIAL AND CULTURAL REPRODUCTION: A REFLECTION ON THE ROLE OF ICTS USING SURVEY RESULTS FROM A SURVEY AMONG YOUNGSTERS IN BRUSSELS AND ANTWERP

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## Abstract

*In this paper the persistence of the digital divide among youngsters going to schools in the so-called Kempen region in the province of Antwerp in Belgium is shown, thereby illustrating the paradox of the contemporary young generation: on the one hand they are seen as being slaves of chatting and games, but on the other hand our research proves that within this generation inequalities in digital possibilities keep existing. The investigated youngsters (N=419) answer questions about their social and cultural origins and about digital media, and the relationship between these origins and the digital media was investigated. The youngsters were interviewed in schools during school time. The results of this survey not only document the access of digital media by these youngsters, but also the applications that were chosen. The so called first level digital divide (the access divide) has vanished in this sample, but user profiles (the second level digital divide) remain different between youngsters with a socially stronger background and a socially weaker background. The youngsters with a stronger social background are more interested in functional computer and internet use, while those with a lower social background are more interested in gaming. These user profiles contribute to a reproduction of class differences by ICT use. Gender differences also remained important within the sample. Girls are interested in using computers and the internet for homework purposes, while boys are more interested in gaming and*



*surfing about hobbies, employment and politics. These gender differences were also found in a similar study in Brussels (N=1005), but the Brussels study had different results on the relationship between social background and digital media access and use, because in the urban environment of Brussels the access divide was more important. Nevertheless this access divide was mitigated in the Brussels study, by a more functionally oriented user profile among the youngsters from Brussels with a weaker social background, who were more interested in politics and less interested in gaming.*

**Keywords:** *ICT access, ICT user profiles, social class differences, gender differences*

## **Introduction**

In research organised in 2007 and 2008 (documented in Mertens, 2009 and Mertens and d'Haenens, 2010) we investigated the digital divide among youngsters in Brussels. The young generation is often supposed to be a digital generation (Jenkins, 2004; De Haan and Van't Hof, 2006). This implies that digital media use is very intense within this generation, to such an extent that sociodemographic explanations are no longer important to explain media use differences. This is called the “diffusion hypothesis”, which contrasts with the “differentiation hypothesis”, that claims that social differences remain important, even within the digital generation. Social differences can be SES differences, ethnic differences, gender differences or education differences.

Our research in Brussels (the capital of Belgium) showed that these social differences still remained important even in a contemporary urban environment in Brussels. In this paper we want to present a further research project that aims to test some of the hypotheses of this earlier research again in an other Belgian region. This region is the so-called “Kempen” region in the north of Belgium, forming a part of the provincial region of Antwerp. Data were gathered by master students in four small villages in this region: Malle, Hoogstraten, Herentals and Vorselaar.

We could expect that the digital divide is less explicit in this region for two reasons. The first reason is that, compared with our research in Brussels, this project was undertaken two years later. The supposed rapid adoption of the digital media can imply a further narrowing of the so-called “digital divide”. Secondly, this region is known to be a region with less explicit social differences especially when we compare this region with an urban environment like the Brussels region, which is characterised by a large social and cultural diversity. These small villages form part of a middle class society. This paper will document persisting digital media use differences among this population, that is often supposed to be socially homogenous.

### **Theoretical background: cultural capital**

Following Nort, Snyder and Bulfin (2008, p. 898) cultural capital consists of academic qualifications, achievements and credentials, awarded for people’s efforts in education and occupation. These academic criteria are often related to an enhanced possibility of developing a higher social and economic status, although social and economic status cannot be entirely explained by cultural capital differences.

ICT use and access can be seen as part of cultural capital, especially when ICT is used for goals that improve one’s academic capacities. Some forms of ICT access and use are however less cultural capital oriented. The possession and use of game consoles can be seen as a form of less cultural capital oriented digital media use. Computers and the Internet can also be used for less academic purposes such as gaming and entertainment. We test if social differences can be seen as predictors of a more functional or entertainment digital media access and use profile.

The environment that has been seen traditionally as the key environment where cultural capital differences are produced and reproduced is the school (Bourdieu and Passeron, 1970). Analyses of the school system in Belgium have confirmed this theory in such a way that the school system in the Flanders (the Dutch speaking part of Belgium) has been called “the school of inequality” (in Dutch: “de school van de ongelijkheid”) (Hirtt, et al., 2007). Because the education system is regionally organised in Belgium, Flanders is our main frame of reference here.

A particularly important distinction in this respect is the difference between the professional education system and the general education system in Flanders. This distinction is an important divide in the distribution of cultural capital, whereby the former is associated with a lower cultural capital achievement and the latter with a higher cultural capital achievement. We will test whether this distinction in the education system correlates with digital media use differences and particularly with less entertainment oriented digital media use, that can be seen as a form of cultural capital.

Youngsters are of course not only conditioned by their own position in the social system, which is in their lives mainly an educational system. Therefore we will also take the social and economic position of their parents into account, measuring this position both as a consequence of their educational achievement (which is a more strict operationalization of the cultural capital of the parents) and as a consequence of their occupational status (a measurement connected more with the idea of economic capital, rather than cultural capital as such.)

A difference between the earlier study in Brussels and the current study in the Kempen region is that in the Kempen region a further complication of the distribution of cultural capital that is important in Brussels is not present in the Kempen region. In Brussels large ethnic minorities are present, and these ethnic minorities often have lower social and economic statuses, which makes the interplay between cultural integration (e.g. knowledge of the language of the host society) and social integration (via the social and economic status) an important research topic in Brussels. In the Kempen region the population is ethnically more homogenous, although research (Mertens, 2010) shows that this region is increasingly influenced by migratory flows in the globalisation process. People that immigrate as a part of these migration flows choose more often for the cities in the region (such as Turnhout) rather than the villages investigated in the current study.

A last difference that should be taken into account is the so-called “gender gap”. Although this difference is not cultural capital related, it remains an important dimension of the digital divide to be tested. Although the gender gap tends to be narrowing research (e.g. Mertens and d’Haenens, 2010; Livingstone and Haddon,

2011) keeps documenting differences. We will use our data on the Kempen region to further test the available evidence on gender issues. We will use the minor differences found in our study in Brussels and test if these differences show up again in our Kempen study.

## **Hypotheses**

Our key research objective is to study the impact of social differences on digital media access and use differences. Four dimensions of social differences will be taken into account: the type of education the youngsters are studying (general or professional education), the education of their parents (whether they followed further studies after their secondary education or not), social and economic status (measured by a specific scale, cfr. the next paragraph) and finally the gender of the youngsters.

We will be studying the effect of these independent variables on three dimensions of the digital divide. The first dimension is the classic access dimension. Do these youngsters have access to computers, the Internet and game consoles (Playstation, Xbox and Nintendo)? Next to access, use will be a second dimension. The third dimension measures user profiles (using a measurement with five applications, cfr. the next paragraph on measurements).

We will formulate the hypotheses using a classical digital divide approach, assuming that weaker social positions lead to weaker digital access, use and user profiles. This implies less access and use of the computer and the Internet and more access and use of game consoles, and a more entertainment oriented instead of functionally oriented user profile.

This classic digital divide framing of the research questions was also used in the project in Brussels. In this project the differentiation hypothesis was confirmed, because there were many significant relationships between the social variables and the digital divide variables, but surprisingly these effects did show an opposite direction in the user profile section, because socially weaker youngsters had a more functional user profile. Hence, we formulate the hypotheses using a classic digital divide approach, but we also keep in mind this remarkable exception found in the Brussels project.

Gender is a particular variable, because being a girl cannot be seen as a lack of cultural capital, although girls are often assumed to be on the weaker side of the digital divide. A second difference is that boys are not only assumed to be more interested in computers and hence more functionally interested in computers, but also more interested in computers from a gaming and entertainment perspective. This implies that the hypothesis will be formulated a little bit differently in the gender section.

This leads us to the following hypotheses:

Youngsters in the professional education system will own fewer computers and less Internet connections, but more game consoles, use less computers and the Internet and have a more entertainment oriented user profile.

Youngsters with less educated parents will own fewer computers and less Internet connections, but more game consoles, use less computers and the Internet and have a more entertainment oriented user profile.

Youngsters coming from low SES families will own fewer computers and less Internet connections, but more game consoles, use less computers and the Internet and have a more entertainment oriented user profile.

Boys will own more computers, more Internet connections and more game consoles, use more computers and Internet connections and have a better developed functional user profile as well as a better developed entertainment user profile.

### **Composition of the sample and measurements**

419 adolescents, born between 1988 and 1997, completed the survey during school hours in their schools in Malle, Hoogstraten, Herentals or Vorselaar. Dichotome measurements were used to register if respondents were boys (a little bit more than 40%), or girls (almost 60%) and to register whether the respondents are in the general education system (45,8 %) or in the professional education system (54,2 %).

To measure “social class”, a more abstract variable, measurement scales were used that were dichotomised afterwards. Occupations were classified from 1 to 13, which means that combining the occupation scores of the father and the mother results in 26 possible points. Those with 1 to 13 points were identified as a having a

low SES while those with 14 to 26 points were attributed a high SES. Using this measurement 54,3% of the investigated youngsters had a high SES and 45,7% had a low SES.

A similar technique was used to measure the educational attainment of the parents. Educations were classified from 1 to 5, resulting in a minimum of 2 points and a maximum of 10 points. To create two categories those with up to 7 points were classified as having a low educational attainment (55,9 % of the population). The respondents with a score from 8 to 10 points were considered as having a high parental education status (44,1% of the sample).

The independent variable “digital media possession” was measured using yes or no answers on 10 questions about digital media possession. It was investigated whether the youngsters owned a computer, an Internet connection, a Playstation console, an Xbox console and a Nintendo console. For these five digital media it was asked whether they possessed these media in the home of their parents or in their own bedrooms, whereby personal possession in the own bedroom could be interpreted as a more “advanced” form of media possession.

Use was measured using “yes” or “no” questions on the two essential digital media, i.e. using the computer and using the Internet. Furthermore user profiles were investigated operationalizing functional use as using computers to search information about homework, to search information about employment or to use computers to search information about politics. Entertainment oriented use is measured as using computers to surf about hobbies or using computers for gaming purposes.

### **Results on ownership**

The results were obtained using cross-tabulations of the independent and dependent variables, with chi-square tests and using logistic regressions with the four dichotomous variables used as independent variables and the different measures of media possession as dependent variables.

Table 1.

## Bivariate analysis: social influences on ownership

	Total	Low SES	High SES	Lower education parents	Higher Education parents	Male	Female	General education	Professional Education
Computer	90	91.7	89.6	90.5	91.4	84.6*	93.6*	94.3*	86.3*
Computer Bedroom	44.4	42.4	43.7	46.2	38.5	46.7	43	38*	49.8*
Internet	89.3	91.7	89.1	90.5	90.8	84.6*	92.4*	85.5*	93.8*
Internet Bedroom	47.7	45.2	48.6	45.7	47.1	50.3	46.2	43.2	51.5
Playstation	45.8	47	45.9	45.7	47.7	48.5	43.8	41*	51.6*
Playstation Bedroom	19.6	20.7	16.4	22.2	14.9	35.5**	8.8**	8.9**	26.8**
Xbox	9.5	9.7	9.8	9	10.9	12.4	7.6	5.7*	12.8*
Xbox Bedroom	3.8	3.2	4.9	4.5	3.4	7.7**	1.2**	2.6	4.8
Nintendo	32.9	34.6	33.3	37.4	37.4	30.8	34.1	28.6*	38*
Nintendo Bedroom	14.3	14.7	14.8	12.1	12.1	12.4*	15.3*	12	16.3

In % ; \* =  $p < 0,05$  ; \*\* =  $p < 0,005$

Table 2.

**Logistic regression: social influences on ownership**

	R <sup>2</sup>	SES $\beta$	Education parents $\beta$	Gender $\beta$	Education Children $\beta$
Computer	0.022	-	-	-	-
Computer Bedroom	0.078	-	-	-	1.001*
Internet	0.069	-	-	-	0.931*-
Internet Bedroom	0.009	-	-	-	-
Playstation	0.019	-	-	-0.458*	-
Playstation Bedroom	0.233	-	-	1.127**	-1.666**
Xbox	0.051	-	-	0.946*	
Xbox Bedroom	0.130	-	-	-	-1.965
Nintendo	0.016	-	-	-	-
Nintendo Bedroom	0.016	-	-	-	-

\* =  $p < 0.05$ ; \*\* =  $p < 0.005$

A remarkable result is that the relationship between parental educational attainment and the media possession variables as well as the relationship between parental SES and the media possession variables never produced one single statistical significance, which is very different from the situation we measured in Brussels in an earlier survey. This means that, at least measured with this criterion, the region we investigated in this survey is «classless».

We do get another view however, when we look at the results from another angle. Parental SES and parental educational attainment can be said to be part of the “class of origin” of the investigated youngsters. This “class of origin” has no relationship with the differences in digital media possession we measured. But the education these youngsters are following, which is part of their “class of destination” has an important relationship with the digital divide.

There was no statistically significant relationship between one of the dependent variables and computer or internet possession, when this possession was measured as the possibility of having at least one access point in the home, whether it is in the own bedroom or in a collective room in the house, but, as the tables on the cross-tabulation and logistic regression analysis show, there are important possession differences in the way youngsters in both education systems have access. The access of the youngsters in the professional education system seems more advanced, because they have more bedroom access and less access in collective spaces in the house of their parents. This could be however interpreted as an indirect evidence of a class divide in the parental generation, because the parents of the youngsters following education in the professional education system may be less well acquainted with digital technologies. This remains a speculative explanation, because in this youngsters survey we don't have data on parental digital technologies use.

Although the more strongly developed bedroom access of computers and the Internet suggests a more developed digital emancipation among youngsters in the professional education system, another point of view suggests that youngsters in the professional education system have a less functionally oriented media possession profile, because of their higher possession of game consoles (cfr. the results in the tables).

Furthermore it has to be added that Internet possession in the bedroom is higher than computer possession in the bedroom, both among youngsters in the professional and the general education system. Possession profiles don't say anything about user profiles (cfr. supra). It seems useless to have an Internet connection without a computer, unless this Internet connection is used for online gaming purposes only.

Another dependent variable that has important effects on digital media possession is the gender of these youngsters. Boys have more access to computers and the Internet in their own bedrooms, which implies a more advanced level of possession among boys, but girls have more access in collective spaces in the house of their parents. The differences between boys and girls in bedroom do however not reach a significance level, while the differences in access points in the house of the parents do, which could imply that girls have a more advanced digital media possession profile.

On the possession of game consoles, the results were as expected in the tables on Playstation and Xbox possession. Boys own these consoles more, especially in their own bedrooms, but the results on Nintendo possession were a bit more surprising. Girls own more Nintendo consoles, especially in their own bedrooms. This could however be seen as a consequence of Nintendo's policy to provide games with a more soft profile that aim to reach a more general audience, while Playstation and Xbox games remain probably more action oriented towards a die hard gaming audience that could be supposed to be predominantly male.

To summarize we can say that the characteristics of the parents, i.e. their educational attainment and SES (hypothesis 2 and 3) don't have an influence on digital media ownership on youngsters whereas their own education (hypothesis 1) and their gender (hypothesis 4) do, implying more personal ownership and more game console ownership among boys and among youngsters in the professional education system.

### **Results on use and user profiles**

A first dimension that has been investigated was the effective use of computers and the Internet. It is a remarkable result that there were 4 youngsters in the sample that never use the Internet and 2 youngsters in the sample that even never use a computer. These isolated cases are interesting to be studied, because they represent an important minority in the digital era. This study however requires a qualitative approach. There are no statistical relationships to be discovered between social variables and these examples of non use.

The tables that are shown here document another dimension of use: the applications chosen by youngsters from particular social categories. These youngsters were asked how often they use the computer and/or the Internet for five applications. The first table shows the percentages of youngsters that said to use a certain application very often. The results were calculated using cross-tabulations and chi-square tests. Another complementary statistical technique were linear regression analyses that introduced the four independent variables of our hypotheses (gender, educational attainment of the parents, SES of the parents and the education of the youngsters themselves). The dependent variables were the measurement scales of how often the youngsters use the five measured applications.

Table 3.

### Social influences on use: bivariate analysis

	Total	Low SES	High SES	Lower education parents	Higher Education parents	Male	Female	General education	Professional Education
Gaming	9.4	12.6	5	10.1	8	13.4**	6.8**	6.3*	12.2*
Homework	20.8	20	22.1	18	25.3	15.2**	24.5**	28.6**	14**
Hobbies	4.3	3.9	4.7	3.2	5.7	6.7	2.8	3.6	5
Employment	11.9	2.2	5.1	14.4*	9.8*	16.5**	8.9**	8.9	14.6
Politics	2.7	2.3	2.8	1.7	3.2	4.3	1.6	3.6	1.8

In %; \* =  $p < 0,05$ ; \*\* =  $p < 0,005$

Table 4.

### Social influences on use: linear regression analysis

	R <sup>2</sup>	SES $\beta$	Education parents $\beta$	Gender $\beta$	Education Children $\beta$
Gaming	0.029	- 0.151*	0.128*	-	-
Homework	0.025	-	-	-	- 0.130*
Hobbies	0.018	-	-	- 0.101*	-
Employment	0.043	-	-	- 0.176**	-
Politics	0.033	0.139*	- 0.115*	- 0.111*	-

\* =  $p < 0,05$ ; \*\* =  $p < 0,005$

There was no statistically significant relationship between the variables measuring the social position of the parents (SES and educational attainment) and the results on ownership, but the results on user profiles show that measurements on the so-called second level digital divide (how the internet is used) show more persistent social influences than results on the first level digital divide (the access divide).

This influence of parental social and educational status is particularly seen in the regression analysis results on gaming. Youngsters with a weaker social background play games more often. Also youngsters who are in the professional educational system play games more often and use the computer less for homework purposes, as we can discover in the cross-tabulation results.

These results confirm the expectations we have about a more entertainment oriented digital media use among the working classes. Another picture is emerging however when we take employment related internet use as a starting point for analysis. It shows that youngsters having parents with a low educational attainment take more interest in employment issues on the internet, which could imply that for them the Internet is a more functional medium, which contradicts the expectations about their entertainment oriented profile. We should however be cautious about this interpretation, because their interest in employment issues could imply that they will be looking for work faster after their secondary education, dropping out of school and missing the more interesting employment possibilities that youngsters with a higher education degree will achieve, although they are not really directly interested in employment issues.

The results on the internet use for getting information about politics are not contradicting the expected pattern of more interest among those having higher social statuses. Although the cross-tabulation results of those having a very developed interest in politics on the internet do not show relationships with social variables, a different picture emerges from the regression analysis results. The SES and educational attainment influences the amount of politics related internet use, because youngsters from higher class homes do sometimes use the internet to search information about politics, while the youngsters from lower class homes more often indicate that searching information about politics on the internet is something they never do.

The results on gender and computer gaming and on gender and using the computer for homework purposes are comparable to those on class related variables and gaming and computer use for homework. Girls spend relatively little time on the computer to play games and relatively more time on the computer to work on homework, while the opposite is true for boys. The use percentages of girls are similar to those of the higher classes, while the use percentages for boys are similar to those of the lower classes.

These results could convince us to think that girls have more advanced user profiles compared to boys, but the results on the three furthermore measured computer applications do not support this conclusion. Boys are using the computer more often to search information about hobbies, politics and employment. This conclusion can be derived from the results of the linear regression analyses and in one case (the use of the computer for employment purposes) also from the bivariate analysis using cross-tabulations and chi square tests.

### **Discussion and conclusion**

Comparative European research (Hasebrink, et al., 2009) shows that there is evidence of a persisting impact of social and economic status on the access divide. Our research shows that in this sample a similar persistent SES impact on access is not visible. That may be the emergence of a digital middle class society, at least within the younger generation, and this is both true when we measure SES using occupation and education of the parents (hypothesis 2 and 3). When we use the education of the youngsters themselves as an approach on digital media ownership (hypothesis 1), differences do emerge. Youngsters in the professional education system own more digital media in their own bedrooms (which makes them more advanced users), but they do own more game consoles, which gives them a more entertainment oriented profile.

Nevertheless these differences are minor compared with the status induced differences we found in our earlier study in Brussels, where SES determined a remaining Internet access divide. It is an important finding in this study that this Internet access divide does not exist in the Kempen region in 2010 as it existed (and maybe still exists) in Brussels in 2008.

When we compare our results with the Brussels study we might say that our research findings indicate a narrowing of the

digital divide, but we have to add immediately that social status variables (parental occupation status, parental education and education of the youngsters themselves) do have an important impact on the user profiles, i.e. the second level digital divide, whereas access is the first level digital divide. Youngsters with a weaker social background in the Kempen region use the computer for gaming purposes more often than youngsters with a stronger social background, and they use the computer less for informing themselves about politics. This contradicts the socially compensatory function of internet use that was found among youngsters in Brussels, where youngsters from a socially weaker background were less interested in gaming and more interested in politics on the internet. The weaker interest in using the internet for homework issues and the greater interest for employment issues on the internet are the same in Brussels in 2008 and in the Kempen region in 2010, but employment issues on the net are the only of the five tested applications that youngsters with a weaker social profile use more often, and it can be said that this is a consequence of their earlier entry in the labour market implying also that they are taking less attractive positions.

Hence our data are ambivalent when we compare them with our Brussels data. The access divide is less important in this second study, but the use divide is more salient. At least our data on gender and possession are more consistent in both our studies, with both studies confirming more game console and gaming use among boys and more bedroom media possession among boys. Girls are interested more in homework in this sample, as was the case in the Brussels study, but they are less interested in employment and politics on the Internet compared to boys. Findings in this study which we did not find in our earlier Brussels study were the greater computer and Internet access of girls in collective spaces in the home of the parents and the greater Nintendo console possession of girls.

The survey includes more questions on more applications, as well as questions on attitudes and motivations, which will enable to refine our analysis. Other analogous surveys will enable us to further test if and how the first level digital divide show a further narrowing in diverse regions and if and how the second level digital divide mitigates or reinforces the second level digital divide.

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## THE OTHER SIDE OF THE SCREEN: WOMEN FROM LATIN AMERICA IN LONDON AND THEIR ENGAGEMENT WITH THE INTERNET

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### **Abstract**

*This paper is based on Media and Cultural Studies and Social Studies of Science and Technology. Through a qualitative approach it aims to contribute to the field of digital inclusion, specifically among women from Latin America in socioeconomic disadvantaged conditions in London and their engagement with the Internet into their everyday lives. According to the literature, due their context and characteristics, disadvantaged populations are more likely to present barriers to engaging with ICTs. However, I propose to challenge these assumptions and to explore how elements from their context and environment may act as drivers to use technologies, such as the Internet. This approach shifts the focus to questions regarding the nature and purpose of Internet usage, taking into account their cultural background as well as their context as immigrants in a vulnerable situation in a city such as London. The methodology includes the interview of forty Latino women currently living as immigrants in London and with earnings similar to the minimum wage. Furthermore participant observation was conducted in four households as well in two community centres that provide computer classes in Spanish for beginners. The main conclusion is that their current situation does not necessarily prevent them from building digital skills because there are other factors that act as drivers to engage with technologies. Nonetheless all of them presented a change in the way they approached technology, which was triggered by the change in their living circumstances.*



*Finally, their quality of life does not necessarily improves as the usage of ICTs do not necessarily help them to acquire language skills, a better job, to change their legal status, nor to engage them in the society in which they are currently living.*

**Keywords:** *woman, Internet, Latin America, domestication*

## **Introduction**

Technologies are neither neutral nor generic tools. New technologies provide scope for interaction, they offer a wide range of possibilities and thus it is difficult to consider them as generic artefacts because they mean different things for different people (Anderson and Tracey, 2001; Selwyn et al, 2005). Similar is the case of the Internet itself, which is not a single nor given device (Hine, 2000) rather it is a 'range of practices, software and hardware technologies, modes of representation and interaction (...)' (Miller and Slater 2000:14). Its meaning is constructed in everyday life, fed by peoples' beliefs, expectations, experiences and networks, rooted in their social and cultural context (Anderson and Tracey, 2001; Hine, 2000; Miller and Slater, 2000; Selwyn et al, 2005). This is crucial to comprehending where they are embedded as well its meanings due to technological understandings emerging in local conceptions (Leaning, 2005) and how technologies are embraced is linked to people's histories and social locations (Hines et al, 2001). In this context a relationship is established between people and an artefact: they take what they considers suitable, what makes sense in their own world and context, making use of their understandings of society, resources and codes. In this process the device is shaped, adapted and domesticated (see Silverstone and Haddon, 1996). Nonetheless this is not a straightforward procedure, as this artefact was moulded in a broader society and different forces are inscribed on it (Pinch et al, 1987; Sorensen et al, 2000) posing difficulties and obliging it to be interpreted as well.

These interpretations are expected to be difficult for those who are considered to lack economic and knowledge resources and as

well from those from different cultures (Leung, 2005; Wyatt et al, 2000). In this sense, relationships with technologies vary and 'can be experienced as an organic part of oneself, or, on the contrary, as a poorly made prosthesis' (Bakardjieva 2005:191). Contradictions, negotiations, expectations and external forces are part of this process and to be engaged is a concept that unfolds this relationship. Furthermore people carry with them their religion, language, speech patterns, values, social orientations and beliefs (Berthoud et al, 1997; Healey, 2006; Modood, 1997; Kim, 1998). These elements are part of their ethnicity and enhance their identification and sense of belonging to a community through boundaries that differentiate them, and what accounts for their history and ancestry (Buckingham, 2008; Hall, 2003) is their cultural identity, which is reflected in their experiences and codes (Hall, 2003; Kim, 1998). Cultural understandings are needed to assess the intricacies between individuals from specific communities and the technologies they use (Bird and Jorgenson, 2002; Georgiou, 2005; Leung, 2005). In the context of this research, understanding these intricacies is crucial in examining how Latin American women make use of their own cultural codes in their engagement with technologies.

Among the different vulnerable populations that can be encountered in London, this paper focuses on immigrant women from Latin America. Usually minorities and migrants are part of those considered to be disadvantaged (Anthias 2001; Berthoud et al 1997; Healy 2006) and they are also part of the target population for digital inclusion initiatives (UK Online Centres, 2008; UK Home Access taskforce, 2009). Furthermore, those from Latin America are perceived in some countries to be less skilled (Gomez-Pe a 2001; McIlwane 2007). Some scholars have offered this response to different interpretations of technologies rooted in cultural understandings, which contribute to a narrative of 'technophobia' allegedly rooted in a racist discourse of sorts (Hines et al, 2001). However, the picture is complex because the situation for Latin Americans in the UK is not currently monitored by the Government, which enhances their vulnerability (Carlisle, 2006). Thus they have been called 'the invisible community' (Bailey, 2007) given the fact that they are not acknowledged as a racial group. One of their main cultural characteristics is their machismo, where women have lower status and rights than men regardless of their age and role within the family. Though the in-

tensity of machismo is presented differently among Latino families, it makes the selected population (i.e. immigrants, Latin Americans, women) one of the most disadvantaged and, furthermore, one of the most technologically challenged. Thus the path these women take to evolve as Internet users, and their experiences with technology, becomes an interesting case to portray how vulnerable populations digitally engage.

The advantages of using digital engagement as a primary concept is that it incorporates elements of the appropriation and domestication processes, but goes beyond them due to the dynamism and context specificity of the circumstances of Internet use. Digital engagement is, therefore, a more inclusive concept than appropriation because it refers to the involvement that people develop and the consequences of their particular relationship to technology. Furthermore, this concept does not stop, as appropriation does, with the way that people adopt technology. It also draws attention to their particular understandings, processes and experiences providing an insight to users' (re)interpretations of the Internet, and how much influence the disadvantages have given their context and resulting vulnerabilities. Moreover, appropriation is usually applied when technology is considered new to a person, without giving much consideration to changes of circumstances. Though in this research there are a variety of participants, where some of them are starting to use the Internet for the first time, there are also others who domesticated the Internet in a completely different setting and as such they need to renegotiate its meaning in the new context. Hence, the main focus is on how they experience it in their specific conditions as immigrant women, from a holistic approach. Finally, in appropriation it is suggested that there is a linear relationship of sorts when the person makes the device fit into their everyday life, whereas engagement problematizes usage by suggesting a more reciprocal and interactive process.

### **Methodology**

The fieldwork was conducted with forty immigrant Latino women currently living in London. They are aged between 18 and 85 years old, with a range of educational backgrounds, marital and legal statuses and with earnings similar to the minimum wage. The fieldwork was compiled primarily through in-depth interviews with a combina-

tion of ethnography, in the form of participant observation in computer classes for beginners in two Latino Community Centres and also in four households. All participants accessed the Internet at least twice a week, though the places vary among their houses, cybercafés, and community centres.

The explorative nature of this research provides the advantage of freely approaching a so far unknown topic, such as the experiences of Latino women in the UK with the Internet. The criteria for recruiting these women were rather loose, with no specification regarding their previous circumstances, such as their educational background, work experience, marital status, among others. This proved to be a good methodological decision in order to get a clearer picture of the population in question, yet it also poses some difficulties for the analysis.

The variety of participants makes it difficult to generalise some of the findings, and moreover, the explanation for their interactions with new technologies are as varied as they are themselves. Indeed, the key to understanding their present and their relationship with new technologies, especially the Internet, lies in their life stories and their memories. For example, there are two participants, both middle aged, married with children, and both currently working as cleaners. However, one is illegal and she only has experience of manual jobs similar to this one. The other one is in a very similar present situation, but she has a degree and this is the first time that she is working in a non-professional job and facing socioeconomic difficulties that consequently decrease the quality of life she used to have in her home country. In both cases they use the Internet regularly, but where they acquired the skills, how they appropriate the computer, their confidence with it, and their overall involvement with the Internet is quite different. Thus, it is necessary to make certain distinctions among participants to achieve a flow in the following presentation of the findings. This will be made through the creation of categories. These are rooted in the two aspects that appeared the more relevant in order to differentiate the past and present of participants; their age and education.

Usually age is mentioned as a characteristic that makes a difference among technological performance. For example, generational classifications indicate that the elderly are more likely to be less proficient with ICTs; on the other hand, there is research claiming

that youngsters are expected to engage easily and to be naturally ICT savvy. Though this discussion goes beyond the scope of this research my point here is to highlight how age drives expectations of technological skills and performance. This study was not the exception and indeed during observation in community centres it was possible to see elderly participants who encountered computers for the first time struggling more than someone who was in their 30s or 40s. However, it would be misleading to classify these women exclusively according to their ages, with the assumption that this will be the element that indicates how skilful they are and will lead to an understanding of the place the Internet has in their lives. The moment when they acquired the skills, and their backgrounds, also need to be present in the analysis. In this research, it was their education and past work experiences that made a difference. It is due to these elements that they are not all in the same position regarding technology, despite the fact that they are all immigrants who find themselves in vulnerable circumstances now.

As such, two major distinctions need to be made. The first is the abovementioned moment in their lives when they had the opportunity to access a computer and the Internet for the first time, in terms of their age and generation. Secondly, the educational tools they had to hand, such as any knowledge about it, experience of formal teaching or working with other technologies, or if they received guidance from a teacher. This background is important because someone who did not encounter technologies while studying has less chance to work with computers, and also experiences difficulties in developing technological resources and abilities (Oudshoorn and Pinch, 2003). Education is also linked to other characteristics and provides an idea of the capacities and possibilities the participant has encountered in her life, as well explaining different uses of the Internet and future aspirations. For this purpose an 'educated' participant will be considered one who attended to university though her degree may be uncompleted. The course may or may not involve the usage of technology. 'Non-educated' will be someone who did not finish school, or finished school but with no usage of computers during her studies. Women who attended to other manual courses are also part of this category.

To operationalize these differences participants were classified in four main categories: Young age (participants aged 28 and 30) –

educated / Young age non-educated; Young middle-aged (participants aged from 31 to 44) – educated / Young middle-aged non-educated; Middle-aged (participants aged between 45 to 60) – educated / Middle-aged non-educated; Elderly (participants aged over 61) – educated / Elderly non-educated.

## Discussion

### *What the Internet means to Latino woman*

The efforts some of these women go to in order to have access to computers are noteworthy. In some cases, they lack the financial status to purchase a computer so they collect pieces. For example, Adriana found a flat computer monitor in a bin at the office where she works as a cleaner. She took it with her. A couple of weeks later she found a keyboard. The screen and keyboard spent a month in her room until her husband decided to buy a mouse and a CPU, in order to have their first PC at home. Gabriela's case is similar; her husband found a laptop in the street, next to a bin. It looked broken but he was confident it was in working condition. They took it to a technician in their borough and for £40 they got a refurbished laptop. Not all participants who own computers got them in the same way though, some spent their savings or took out loans; others received them as gifts from a family member, or recycled by friends. However, for many there was a conscious effort behind the decision. Therefore, the question is why bother? What is the reason that motivates them to purchase a computer, to pay for Internet access, to go to classes? Where does the need among this population come from?

In the case of elderly women, both educated and non-educated, among their main reasons for attending to a computer course for beginners was the fact that they can learn something useful, and have the opportunity to experience something they have seen before but never had access to. This is what happened to Luisa and Sofia in their previous jobs as cleaners, in an office and in a house respectively.

*'[I came to the course] because I wanted to learn, I always saw computers every place I went, and well, I told myself I wanted to learn so I could find out what all that was about'* (Luisa, Colombian, 63, non-educated).

*'It was with one of the last bosses I had, I watched how she managed the computer (...) and I usually watched her playing Casino on*

*the computer, and I liked to watch this and I would like to learn how to play Casino too'* (Sofia, 65, Peruvian, non-educated).

They are examples of one of the motivations to start using computers, which is this feeling of being left out of the loop, seeing others making use of something that looks important or entertaining to them. Their first attempts were not just because they wanted to develop knowledge about ICTs as such, or to make use of the applications available, but to be part of something they felt they were missing. Elena, on the other hand, was well aware of what the Internet could offer her and that was part of her desire to start using it:

*'I knew of the existence of all this of course, my sister and I always talked about how wonderful it would be if we could have a computer and communicate when someone leaves or moves countries. We did not know how we could manage to buy one and then, if we could buy a computer how were we going to use it if we did not know how it works?! Then when I heard about this [computer] course [in Casa Latina] I felt so happy! Can you imagine? I have a daughter in Spain, the day I sent her the first email she was very happy too and she answered me by saying "Welcome to the XXI century, long live technology!" [laughs]'* (Elena, Colombian, 67, non-educated).

Family and communication usually go hand in hand in these circumstances, along with the fact that a member is living far away, as with Elena in the UK and one of her daughters in Spain. Nonetheless, to start learning how to use certain technologies at their age is a milestone, because, among other reasons, they are in a society where the message is that they are too late. Those who discovered it while they were in Europe, or specifically in London have been aware of the importance of new technologies for several years, they have seen other family members, friends, bosses making use of it, and they usually had to face embarrassment and frustration at not having access or not knowing how to work it. For them the possibility of learning and finally using the Internet is very much appreciated, thus their assumptions are based on what they have heard, rather than on what they know about it. Hence, their expectations and understandings of the Internet as the place where anything can be achieved.

*'The Internet is like a library... it is an electronic library because everything you want to know or research is a click away. It is that simple! Everything you want, Mr Google gives it to you'* (Maria, Colombian, 55, non-educated).

*'Via the Internet you can see your family who are in your country, you can see them through the screen, you can talk to them, you would not be able to touch them but you are going to see them, to laugh, to talk, to see family pictures, you can also watch movies, you can download all the music you want, you can buy stuff, you can read books, visit museums, there is so much that you can do! (Berta, Colombian, 41, non-educated).*

In Maria and Berta's view, the Internet and computer are very much the same, they also share this *everything-is-possible* view, which to some extent disregards their levels of skills and shows a complete unawareness of what can be found on the Net. In the case of Maria, she has a blind confidence that everything on there will be true as it has the trustworthiness of a library. Hence, when she researched something related to her health or medical conditions, her awareness about what sort of source she is using is not of relevance because 'Mr Google' says so. She has an optimistic view about the Internet and technologies in general, without realising all the dangers that this kind of thinking, plus a lack of education, might bring. Berta, on the other hand, is more specific regarding communication options. Though she has not – as she mentions – read a book, nor does she download music or visit museums online. Her discourse is led by what others have told her about what can be done, rather than her experience.

Educated and younger women are usually in a different position, as for them the Internet is not necessarily a technology to conquer, but rather a device that provides rewards according to its use. They had the opportunity to encounter it earlier in their life and usually with some guidance. Nevertheless, their engagement might change when their life circumstances likewise change. In their current status they are not working with computers, but they might have done so in the past. What makes the difference is that they commonly gave meaning to technology prior to this change of conditions, thus the purpose of use was established while they were studying or working. They have long passed the phase of exploration, they are competent computer users and due to the context of their lives they need to renegotiate its place in their lives.

*'I like to play on it, it is a way of distressing, so I usually play solitaire, I play it all the time! It is horrible but it is like forgetting everything, I forget about the world and the time passes so much quicker.*

(...) *For me the computer is a relief in my life*'. (Rosa, Colombian, 32, educated).

This is the view of Rosa, who is an example of someone who does not need to negotiate from scratch the meaning of the computer, although she is re-accommodating it. When she had a job as an engineer she used the computer and the Internet to work and to search for information, now as a cleaner it is her escape from an uncertain and painful way of living. The use of the Internet as a hobby to cope with difficulties was shared by those who worked as professionals in the past and are now working in low-skilled jobs. Despite their reasons for leaving their countries and staying in the UK, there is a level of frustration and that they manage, among other ways, by making use of the computer. This reminds them of similar activities they used to practise in their home countries, like visiting certain websites and social network sites. Thus the place the computer has in their lives may look peripheral, but it is crucial.

*To learn, to learn, to learn: the importance of education for Latinas and the role of the Internet*

Digital skills and proficiency in using the Internet are a goal for the non-educated and elderly (educated and non-educated) to achieve. This is clearer in those who enrolled in computer classes in a community centre, however, the importance of education and developing skills is something that was found in all of the interviewees. For most of them, the main barrier was the lack of time to engage in a formal course, as all their efforts are concentrated on work and, if they have any spare time, English courses (despite this being the legal reason some of them gave in order to obtain a visa). Only those who have more spare time were able to combine work, English and computer classes. This was also influenced by their partner, and whether they have a mentor at home in order to learn some basic skills before looking for help outside the home.

Fifteen out of the forty participants took part in a computer course in one of the two community centres where the participant observation was conducted. The youngest was 40, then 55, and 13 of them were older than 62. Both centres are charities for Latin Americans and as such classes are held in their native language, Spanish. This helps to explain why they decided to attend a centre that is not located in their own borough. In terms of their advanced age, they were the ones with more available time to attend these

kinds of activities. Their consistency in terms of participation, interest, and progress may be explained by several conditions too. One is their genuine interest to learn about computers and the Internet. Another point can be made regarding their particular interest in starting a formal learning course. Although the length and extent of it are basic and limited, they perceived it as an opportunity to learn something useful that cannot be missed. Finally, the atmosphere can be described as friendly, especially because the course is taught in their native language and with a teacher and assistants who were described by the students as enthusiastic and patient. Therefore, they had the opportunity to spend two hours per week learning about ICTs in a relaxed environment, socialising, and being able to understand the context and content. An example of their appreciation of the course is given by Carmen during a free writing exercise in Word:

*'Today I have created an email account. I will use it for my classes, which have been interrupted by my illness. It is fabulous to have access to these programmes [Internet, Word] because I never bothered with them before. Thank you for all the interest you [teacher, assistants] show towards us, for taking into account the interests of Latino people, especially the elderly because we feel isolated for several reasons, but especially for the language and the warmth of our [Latino] brothers'* (Carmen, Colombian, 85, educated).

They are keen to embrace the possibility to learn, and they devote time and effort – especially those who come to the centre – in order to learn different activities with the computer. They also feel welcome and it is a way to engage in activities that help them to cope with isolation. Thus, this is the way they find to fill different gaps in terms of knowledge, but also in terms of socialising with their peers. This is also connected to their social network and particularly their family status. The people who attended the course were women that could not find help to develop the skills at home, either because they live alone or because their children or partners were too busy to engage in the task. Nevertheless, the latter is the exception and most of the elderly live by themselves with occasional visits from relatives. The course also provides a safe environment to engage with computers because they have guidance and they are not putting the machine at risk, which is one of the fears they have, of damaging or deleting an important document belonging to the owner.

Educated participants who did not have the need to attend class – either because they had more experience or a support network – also engage in learning. The majority of them use the Internet to learn about English and visit pages where they can do exercises (though just one of them took and finished a proper English online course). Others make use of the Internet to learn about their interests, for example, Photoshop, cooking, first aid, and religion. None of these were part of a formal online course, but an informal source of access to knowledge that they perceived and described as ‘online education’.

### **Ties with family and friends back home**

A distinctive characteristic of the Latin American culture is the constant expression of emotions, especially physically, which is even more accentuated among family members. Thus, Latino families and extended families are usually groups with tight bonds that have celebrations together. The division, or separation, of a family is most commonly explained by a severe conflict or a traumatic situation. In fact, most of the participants for the study that came to London alone consciously decided to abandon their family group due to a distressing event, such as the death of a beloved member, or to escape from their partner’s affair . In other cases, the idea of a better economic future fuels the decision and what they consider to be a sacrifice. Regardless of the motives, the family remains an important element in these women’s lives, so to maintain contact with them is a priority.

ICTs, such as the Internet, are well known for being a cheap way to increase possibilities for communications. Email, chat, video conferences, and social networking sites are among the applications that make being away easier, and to some extent they are also a wise decision in financial terms. These are also the favoured ways of communicating, especially for those who have more experience and skills, such as the case of Maria. She is a Peruvian married to an Argentinian with Italian citizenship. They have been in the UK for the past three years and their living conditions have changed from those they had beforehand. The former journalist and TV producer now works as a cleaner and attends a school to learn English. Her husband works as an assistant chef in a restaurant, but is far from achieving his dream of starting his own business in London. With

two young children they have a pretty busy daily life and no time to build friendships. Skype and Facebook are the only way for her to communicate with her mum and friends back in Peru. She also edits videos of her children and posts them online so that the grandparents can see their development.

For non-educated women family communication was usually a trigger to start using the Internet and computers, both at the same time. All their efforts would be focussed on those they love, family members and friends, but not on strangers. Furthermore, in the interviews they expressed the idea of meeting people online or starting friendships on the net as something that scared most of them, alerted by press reports of people being deceived or even killed after meeting an online acquaintance in person. From their reported experiences, as well as the observations, it was also possible to understand how the Latino Community in London does not share online bonds or communicate making use of online networks. These women remain isolated and sometimes participate in communities, such as religious ones, but not often. Thus, there is little room for online ties besides family and friends and these are so strong that even those who are afraid of the device, or who do not have the skills, will make an effort in order to develop and get in contact with those back home.

#### *Lack of English – living in a country they do not understand*

In order for immigrants to be an active part of the society they are living it is crucial for them to speak the language. Thus the quality of their everyday life is often limited if this requirement is not fulfilled. All the women that participated in this study, regardless of the time they have spent in the UK, refer to language as one of the biggest issues they have to deal with. Many of the participants have managed to find jobs where a lack of English is not a problem or a challenge, though this means they have manual or low-skilled work. However, a lack of English is far more problematic than finding a non-manual job because it is the beginning of more profound disadvantages and vulnerabilities. To fill out official forms, go to the doctor, open a bank account, and rent a room, among many other basic needs, they need the assistance of others. This may involve an appointment with an interpreter (causing delays in booking), asking friends or family to act as translators or simply avoiding these situations. Comput-

ers are sometimes presented as a solution, and this becomes a tool they use not just to practise English but also to translate with more or less success. For example, Bernardita (Colombian, 40, non-educated) was looking for a room for her and her son on the popular website 'Gumtree' suggested by someone. She used the translator tool on her computer to explore the site in Spanish. However, then her worries were about how to make a call asking for more information and how to arrange a meeting to visit the place without speaking English. In her case, the computer seems to be a device that helped her initially to cope with this gap but not entirely, nor sustainably.

Google translator was a popular tool among participants. Indeed one of them, Eliana (Bolivian, 42, educated) a biologist and former PhD student was preparing to do the UK citizenship test with its help. During her eight months of preparation, she spent most of the time translating the entire study booklet with this application. She also took online tests and all of them were later translated and emailed with the correct answers, so she would have a complete record of her improvements as well as of the study material in her own language. Eliana constantly refused to study in English and she preferred to have the documents in Spanish and then to memorise it in English. Contradictorily, she interrupted her PhD in Bolivia because English was one of the requirements, and this, among other reasons, made her decide her to come to the UK in order to learn English, but her plans changed along the way. The Internet offers Eliana tools that have helped her to some extent to cope with this obstacle.

### *The appropriation of the Internet into their daily lives*

In the computer classes in both centres, Casa Latina and Irmo, I witnessed how the majority of the elderly women started to begin reaching their new goal. They knew this was an important step and it was one inevitably driven by expectations and anxieties. There was also a lot of frustration because they needed constant help and attention, as they usually got stuck on what for a regular user would be considered a simple task, such as opening the right folder or clicking on a specific icon. This is why phrases like '*I am stupid*' or '*please forgive us, we are so helpless, please be patient with us*' were often heard in the room. An element that drew my attention was how students tried to write down every single step in a notebook. That

usually took about three to four minutes, but provided them with the confidence that it was written down. The major problem was that at the end the notes did not make much sense and once they got stuck on the same step again they asked for the answer and would write it down all over again. This was a sort of indication they were not able to understand the logic of the computer or the simple commands, but they were eager to use it.

What made it more difficult was the fact that the computers were in English, so a great part of the class was spent in explaining the meaning and translating words such as 'send' (and its difference with 'sent'), close, logout, sign in, minimise, maximise, among others. They also experienced problems spelling, so for example web addresses such as Google or Gmail were problematic and of a high level of difficulty, which as a result directed them to the wrong pages. Thus, many tasks were delayed which increased their level of frustration and diminished their confidence.

In terms of manual skills, the use of the mouse and the size of fonts and keys posed some challenges due to their lack of motor skills, coordination and eyesight, which have naturally decreased with the passing of years. Overall, the experience started as a frustrating one, but with enough practice and the right guidance they accomplished being able to use a search engine and created an email account. The case was increasingly difficult for non-educated Latinas in the rest of the age groups. They did not count on the assistance of a teacher who could provide more formal guidance and support. Furthermore, they had not developed formal learning skills due to their lack of educational background, which would have helped them to cope with the challenges that being a new user implies. This might be compensated for through social network support, but this was not always the case. On the contrary, they considered their friends and family to be part of the pressure they felt in order to start using the Internet.

*'[I learnt how to use the Internet when I came to the UK] because I had friends who always went to chat online and I never went because I was embarrassed to tell them that I didn't know how, but they kept inviting me and my response was usually 'no I don't want to' and I was embarrassed to admit to them I didn't know even how to switch on a computer'* (Adriana, Bolivian, 34, non-educated).

*'My husband has been teaching me a lot. He is always saying that I should use it, that it's important. He took a course in comput-*



ers so afterwards he was always teaching me. He created my email account, and also closed my Facebook after I had problems with a friend' (Monica, Ecuadorian, 28, non-educated).

Starting to use a computer was something that Adriana and Monica did not really choose. Nor was it a case of them being forced to learn, but to some extent it was their peers and also part of the context that led them to start the appropriation process. This is different for the elderly participants because they were not immersed in a group where the use of MSN or having a Facebook account is expected. They did not avoid attending a computer course but the lack of opportunities over time left them in that position. However both, with help from their husbands and a dose of curiosity, started their appropriation process at home. However, this was scarcely the case for the rest of the non-educated participants between 28 to 60 years of age.

*'It was in a job I had in a call centre in Spain that I really learnt how to use it (...) I told them I knew but I didn't, so the only alternative I had was to learn. My boss was an alcoholic so he was drunk all the time and he didn't care to test me before offering me the job. When the owner found out, he tried to fire me but I fought for it, I got so many clients and I put a lot of effort in to learn what I had to and I did it!' (Valeria, Bolivian, 39, non-educated)*

Work places and cybercafés are some of the places where appropriation happened for some of these women, always with an obligation behind it, like trying to keep a job in the case of Valeria, or communicating with children who were overseas, or due to the pressure that they felt from family and friends. The scenarios were varied, as well the reasons for appropriating it. What remains constant is the fact that they started up once they were abroad. It was in Europe, where technology was more widespread, increasing their chances of availability as well as the number of social networks and peers that used them. Furthermore, it was in the UK that they also had the opportunity to attend free classes, which is a major advantage in comparison to the investment and effort some of them had experienced ten years beforehand.

It is a completely different case for those who were considered educated in this project (with the exception of the elderly, as previously explained). They have been exposed to formal educational systems in universities, or similar institutions. Therefore, their ap-

appropriation occurred in a different context as it was usually part of their learning process, for most of them this occurred in their home country, or at least in their own language. The use of computers and the Internet was a tool for them to achieve a bigger goal, such as a degree, and not, as in the cases of the non-educated, seen to be a goal in itself. As a result, their first encounter with computers was not necessarily a traumatic experience, as others in different situations recall. In fact, most of them have hardly any recollection of the moment, which shows how natural it was for them.

In terms of appropriation, the context plays an important role because it was one of the characteristics that made the most difference, such as appropriating the computer as part of a degree, rather than because participants felt out of the technological loop to the point that they were embarrassed about it. This, plus the learning skills educated women have acquired, made appropriation a different journey to that of those who did not finish school or those who attended computer classes with no success due to inadequacies in teaching. On the other hand, educated women had the challenge of re-appropriating the device to a new context, positioning it as a device that provides relief and keeps their minds busy in difficult times. This was especially poignant in the young-middle aged educated group. For the non-educated of all ages, it was the context but especially their social networks that made the most difference in terms of their appropriation.

### **Conclusion**

The main objective of this paper was to link the current context of Latin American immigrant women, with different ages and backgrounds, and how they positioned the Internet in their day to day lives. Starting from their position of vulnerability participants live in conditions of poverty that should lead, according to existing literature, to problematic access and eventual disengagement with new technologies. However, this does not necessarily prevent them from building digital skills because there are other factors that act as drivers to engage with technologies, such as their lack of English. Furthermore it is also part of their culture to see technologies and the Internet as a must due the importance they give to constant learning and education. Thus, to learn how to use the Internet as a platform to acquire knowledge – formally or informally – is a driver for them to engage with ICTs as well.

Despite unfavourable circumstances, they manage to find a time and a place to gain and/or practise these skills, which all depend on their educational background. In some cases, this is an investment because it will help them to use the Internet more proficiently and to gain knowledge through accessing it. In others, it will be a way to cope with the adverse circumstances they face as well to reinforce their goals. Moreover, due to their status as immigrants they are aware of the benefits they can gain from the use of new technologies to communicate with their families and friends. This was one of the most powerful reasons they had for using the Internet or for starting to develop their digital skills. Finally, they access the Internet to encounter media content in Spanish, a language they can fully understand. Thus, the computer is a place to learn, to communicate and an escape from a reality which is difficult to cope with. Furthermore, their appropriation of the Internet is shaped by the expectations they have of technologies and the role the Internet plays in their lives.

As has been shown, all of them presented a change in the way they approached technology, which was triggered by the change in their living circumstances. For example, it is in the UK that the elderly participants attended computer courses for free, which is something their home countries cannot afford. It is also here that technology is more widespread, and the use of applications such as Skype and Facebook is part of the activities of the peer groups of younger participants, creating an element of pressure on them to comply and incorporate it as well. The distance and loneliness some of them face are also a major component in their motivations and explain their take up of the technology.

On the other hand, it looks like these women compensate for their lack of traditional literacy by developing computer skills and digital literacy. Hence, one of the barriers that prevents them from integrating into the society they are living in (i.e. a lack of English) becomes the excuse to devote their time and efforts to the computer. Furthermore, although through the use of the Internet they state they feel empowered, this empowerment has no concrete consequences on the quality of their off-line lives and even if they can, to some extent, be considered 'digitally included', they remain vulnerable.

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## **RUNNING HEAD: DIGITAL MULTICULTURAL DIVIDE IN KOREA THE DIGITAL DIVIDE IN A MULTICULTURAL SOCIETY: A META-ANALYSIS OF THE DIGITAL DIVIDE RESEARCH OF SOUTH KOREA AFTER 1990**

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### **Abstract**

*This study explored the literature covering issues associated with the digital divide as it has existed in Korea since 1990 in terms of how this divide is being reified and reinterpreted in the emerging multicultural environment of Korean society. Overall, the findings of this study supported the socio-cultural constructivist approach and demonstrated the importance of considering individuals' structured digital experiences in the socio-cultural context. On this basis, we argued that approaches to the digital multicultural divide should extend public access within a consideration of the multilayered socio-cultural factors that influence the digital divide beyond the limitations of technological determinism. Finally, we highlighted the necessity of considering the multiple dimensions integrated within specific socio-cultural contexts in studying the digital divide. Further implications were discussed.*

**Keyword:** *multiculturalism, digital divide, digital capital, digital inequality, ICTs, meta-analysis*

## **Introduction**

As the world becomes more integrated in terms of information sharing and economic systems, essentially transforming into a global village, using information technology effectively and constantly developing associated skills and knowledge have become critical to the success in every sphere, whether business, industry, or education workforce. Unquestionably, this trend whereby companies and members of the workforce focus on developing skills associated with technology is based on the belief that ICTs (Information and Communication Technologies) have the potential of providing equitable access to information to all. However, such positive expectations are not necessarily realistic inasmuch as existing information and economic inequalities reproduce themselves in the technological sphere, by for example reinforcing the existing social order and on the basis of social and economic status affording some people access to information technology while excluding others. In this regard, ethnic minorities and those with physical disabilities are marginalized, and women are often situated on the periphery in terms of benefiting from and becoming proficient with digital technology. Thus, we question whether the technological revolution is dramatically changing the power structure of society or merely reproducing it in a sophisticated way. In particular, we pay attention to concerns about the “digital divide” as it is created and reinforced by the rapid development of ICT.

On the basis of this primary concern about ICT, the present study explores the digital divide in terms of its relationship with ethnic minorities and the structural conditions they are facing. The central argument in our research is that the digital divide constitutes a particularly serious problem for ethnic minorities in Korea, because they are already marginalized in terms of both education and labor. For this reason, the researchers focus on cultural inequality and the labor force divide in South Korea and the relationship of these with digital inequality’s tendency not only to reproduce itself in a multicultural society but also to reinforce the conditions of that reproduction.

## **Multicultural Society in South Korea**

Although there is no consensus on the definition of “multicultural society” among researchers who study multiculturalism, a society in which immigrants account for over ten rates of the total popula-

tion is generally considered a multicultural society. According to the Organisation for Economic Co-operative Development (OECD), as of 2005, some of its major member countries had immigrant rates of at least 10%, i.e., 10% in France, 12.9% in Germany, 9.3% in the UK, 18.9% in Canada, and 12.2% in the US. According to Korea's Ministry of Justice, as of June 2007, Korea's population included approximately one million immigrants, accounting for 2% of the country's population, such that more than one million of those living in South Korea are members of an ethnic minority. Furthermore, this segment of the population is thought to have increased to 2.8% of Korea's population as of 2010, and it is expected to increase to 5% by 2020 and to 10% by 2050. In this regard, though South Korea may not necessarily be considered a multicultural society at present, it can be said that the country is gradually becoming a multicultural society.

As is well known, South Korea was once a very demographically homogeneous country; however, the gradual change from a homogeneous to a heterogeneous demography is primarily due to three factors: the increasing number of guest workers, international marriages, and *Sae Teo Min* (North Korean defectors). Guest workers and marriages made between Koreans and immigrants made an initial contribution to the increase in the number of immigrants in South Korea. The number of guest workers living in Korea increased to approximately 500 000 as of 2008, and intermarriage immigrants account for about 200 000 by 2008 as well. Furthermore, the generation borne to these intermarriages number approximately 50 000, thus contributing to the country's ethnic diversity. It is important to note here that guest worker take a job in labor-intensive business which native Korean worker is unwilling to do. Further, most intermarriage immigrants are women who are willing to live in suburban areas with Korean agriculturists. Thus, the well-being and equitable functioning of a multicultural society have become matters of concern in South Korea, such that the government has established several multicultural policies. In 2005, the Korea Broadcasting System (KBS) began to publicize the government's catch phrase *Dynamic Korea* as a way of highlighting the country's demographic diversity. The present paper posits that despite the huge influx of immigrants during the last two decades, Korean society is still characterized by a racially biased or ethnically based culture rather than one based

on cultural diversity, even though Korea has been moving forward a multicultural society (Kong et al., 2010).

### **Approaching “Digital Inequality” of ICTs: Two Alternatives**

Unlike the initial expectation that ICTs can spur the level of social interaction among individuals and grow civic participation, and as a result strengthen the power of individuals (e.g., D’Allesandro & Dosa, 2001; Katz, Rice, & Aspden, 2001), recent discussions of ICTs have focused instead on ICT’s role in producing a new digital inequality and/or digital apathy. In discussing digital communication technology and cultural inequality, we necessarily consider that digital media and technology reproduces existing inequalities rather than producing new digital inequalities; thus, there is clearly a need to pay attention to “the role of culture in reproducing digital inequality” (Kvasny, 2006: 177). In particular, Kvasny stressed the importance of the educational system in explaining culture’s role in reproducing cultural inequality. Likewise, Bourdieu emphasized the role of education, particularly the educational background of a person’s parents’ in explaining “how education inculcates a social order based on power” (Kvasny, 2006: 162). Kvasny argued that CTC plays an effective role in “inculcating dominant views about and uses of ICT as well as legitimizing the privileges enjoyed by the culturally dominant groups” (2006: 175). Given that cultural capital is closely associated with media and technology usage, studies of how cultural capital affects media and technology use are also needed to focus on the cultural uses of technology rather than on technology per se. In this regard, cultural capital theory can contribute to our understanding of and responses to culture as a factor, perhaps the determining factor, in matters related to digital inequality and the reproduction of social inequality. Similarly, using critical discourse analysis, Tapia and colleagues (2011) examined the ways in which social inclusion is rhetorically expressed in the public policy of broadband service in three U.S. cities, Philadelphia, San Francisco, and Chicago, and argue that the discourse of digital inclusion plays a key role in justifying the economic urgency of ICT for stepping into the successful new economy by offering the illusion that broadband as a market-oriented service will be an alternative to the current insufficient ICT service. They also argue that the basic assumption in such discourse is that ICT is the key to alleviating the digital inequalities that are marginalizing minorities.



In the meantime, Rodino-Colocino (2006: 504) criticized first- and second-wave research for focusing exclusively on “access to technology and acquisition of technical skills” and failing to recognize that the digital divide constitutes a structural problem that “exists in the labor market.” In her view, even the second-wave digital-divide scholars who hold relatively soft deterministic views have not deeply considered “the significance of the labor force divide,” even though second-wave digital-divide research has raised questions about how to rethink and redefine the digital divide “beyond the problem of access” to consider “other variables” that “interact with social, economic, and political problems” (2006: 498).

It is appropriate for Kvasny, Rodino-Colocino and others to criticize the optimistic rhetoric that has characterized the discourse of the digital divide. The study entirely agrees with the view that the digital divide is essentially structural such that a technical training-centered education system cannot solve the problem of digital inequality, particularly in regard to the ways in which the labor force is divided. It is fair to say that digital-divide research has tended to shift socio-structural responsibility to individuals, thereby weakening the “structural critique.”

### **Digital Multicultural Divide: A Contemporary ICT Matter**

Although the omnipresence of computer-mediated communication technology has the potential to allow access without regard to gender, disability, creed, race, or culture, the cultural characteristics of ethnic minorities and socio-economic status may continue to influence access at present and may even determine how any given group uses the Internet and computer technology (Norris & Conceição, 2004). Given that culture refers to how ethnic minorities perceive ICT in relation to their behavioral heritage, culture is associated is an important factor in establishing, understanding, and negotiating identity. Thus, prior to investigating the issues entangled with the digital divide in multicultural society, it is necessary to discuss the role of media/technology and the meaning of its consumption. Media and communication technology has been discussed as reifying the social order by representing stereotypical images. Thus, it has been claimed that ICT and media technology does not merely mirror culture – it shapes and distributes the dominant ideology (e.g., Fiske, 1994; Hall, 1997; Williams, 2001). At the same time,

however, these stereotypical images are not sustained as the racial boundary becomes color-blind and decentralized such that binary racial antagonisms, e.g., black/white, are complicated.

For this reason, critics have considered a new approach to understanding racial groups. In particular, social exclusion theorists emphasize the environmental conditions and context of systematic social exclusion whereby some people are underprivileged in terms of access to socio-economic resources and opportunities (Farrington, 2002; Peace, 2001). Furthermore, many sociologists address the importance of structural conditions, such as the structure of opportunities, spatial segregation, and the family, as well as individual factors (e.g., Lee & Bean, 2004; Lopez & Espiritu, 1990; Okamoto, 2003; Quillian, 2006). For example, based on racial formation theory, Omi and Winant (2005) argued that racial construction can be regarded as the “blending of dominance/resistance, contemporary politics, global context and history” in time and space. In keeping with that position, Dixon (2006) observed that racial/ethnic hierarchy rooted in historical and cultural contexts has shaped whites’ sense of being threatened by, their contact with, and their prejudice towards minority groups. Feagin (2006) called it “systemic racism”; that is, whites maintain and allocate resources unequally through ideologically white-dominated institutional mechanisms. It is based on such a background that the role of the media and communication technology in producing enduring racial/ethnic discrimination should be considered.

Furthermore, media and communication technology plays a crucial role in negotiating between identities in current diasporic society. Some studies in communication have discussed such issues in order to gain a deeper understanding of the relationship between the new media, communication technology and identity struggles. For example, Goode (2010) examined how holding a particular identity impacts college students’ campus lives as well as their academic achievement or frustration. She suggested that a theoretical concept of technological identity would be beneficial to understanding “the situational relevance of the digital divide” (Good, 2010: 509). The present study focuses on connecting between two aspects of social change – globalization and the development of new media technologies – to enable us to negotiate among the multiply constructed identities we might have. Each individual’s identity is constructed

by such multiple factors, and thus, it is necessary to conceptually understand the formation of ethnic identity as it relates to media and communication technology use. It is clear that the phenomenon is both closely associated with achieving socio-political rights and embedded in fundamental issues of globalization and immigration.

Under current conditions of rapid globalization, a concept that merits attention is the diaspora, which is defined as “a decentralized relation to ethnicity, real or imagined relations between scattered people who sustain a sense of community through various forms of communication and contact and who do not depend on returning to a distant homeland” (Peters, 1999). Appadurai (1996) suggested that modern identities are connected to individual and social groups that form new types of transnational culture. Therefore, in applying this concept of diaspora, many studies have attempted to explain the relationship between the diaspora and communication technologies with a particular focus on transnationality and hybridity.<sup>1</sup>

The relationship between ICT and multicultural conditions associated with the digital divide need to be discussed in two parts. It is necessary to discuss first how ICT works for racial, cultural, and socio-economic groups in perceiving barriers and suffering from control related to traditional and Internet resources for seeking and using relevant information. Secondly, it is necessary to consider how ICT affects their capability of labor in context of the reproduction of cultural inequality.

## **Digital divide in Korea from 1990 to the present**

### *Method and Data Resources*

The data used in this analysis was collected only from articles in periodically published academic journals, excluding various reports

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<sup>1</sup> The concept of diaspora was originally used to refer to those who have been exiled, but it is also used to establish an “understanding of migration, people’s multiple sense of belonging and loyalties beyond national boundaries” (Georgiou, 2006). That is, as space becomes more transnationalized, local culture and identity also become associated with processes of globalization. Therefore, according to Georgiou (2006), current studies focus on those who directly experience de-territorialization and re-territorialization and those who transfer or sustain distinct identities as well as social relations within and across nation-states.

published by the government, reports published by public research institutions and private research organizations. The samples comprised articles relevant to the digital divide or digital inequality in the social sciences, including sociology, politics, women's studies and science of public administration. To gather the data, researchers used the keyword searching method on websites providing academic information services, such as DBPIA ([www.dbpia.co.kr](http://www.dbpia.co.kr)) and KISS ([www.koreanstudies.net](http://www.koreanstudies.net)). The key phrases, which were inputted in Korean, were *digital divide*, *digital inequality*, and *information gap*. The number of articles collected was 60, of which 55 were selected for the sample. Coding was performed by two students studying communication at the graduate level. Before the analysis, they received training as coders and took the pre-test in order to ensure inter-coder reliability.

A total of 7 items were designed for the analysis: (1) the dimensions of the digital divide (global, region, generation or age, socioeconomic class, gender, race, etc.), (2) theoretical standpoints (technological determinism, socio-cultural determinism, or both), (3) contextualization of the digital divide in terms of labor (yes or no), (4) approaches to discussing the digital divide (industrial consideration, public interest, or both), (5) suggestions regarding alternatives or solutions to the digital divide (yes or no), (6) types of alternatives/solutions (global/macro bonds, public access policies, contents, information access education, media or information literacy education, etc.), and (7) emphasis on multiculturalism in the discussion (yes or no)

### **Digital Divide in Korea: A meta-analytic review**

Dimensions of the digital divide. The initial wave of discussions regarding the digital divide not only paid attention to technological determinism, but also highlighted its relationship with socio-economic status. By conducting a meta-analysis for the period of 1990 to date, the present study considers how previous studies have dealt with the issue of the digital divide particularly in terms of class inequality. As shown in Table 1, class inequality constitutes 31.6 % of the total, which means that overall the studies found class to be the major factor in determining information inequality. Further, the previous studies on South Korea's digital divide paid close attention to the problem of the digital gender and/or generation divide. The

digital generation divide was addressed to some extent in 22.4%, whereas the figures for digital gender were 24.5% digital gender divide. Although a few studies considered the issue of the digital divide at the international and/or global level (e.g., Moon, 2005), the only study of Lee (2009) focused on ethnic inequality in regard to the digital divide and its close relationship to the diasporic identity. But, though Lee (2009) addressed the ethnic issues inhering in the digital divide, that study restricted its discussion to considering how to educate multicultural students in terms of computer skills. This result addresses the point that the digital ethnic divide has yet to become a main concern for digital-divide researchers in South Korea (Table 1).

To date, despite the greater number of immigrants, South Korea remains a fairly ethnically homogeneous society. Thus, issues arising from the existence of different ethnicities and inequalities have not been considered a serious problem. However, in the present study, we argue that because guest workers are concentrated in blue-color jobs that require little in the way of technological skills, most of them who don't have a citizenship are actually working in conditions properly understood as exploitative. Although, current discussions of multiculturalism have become more diversified with the increase in multicultural families and intermarriage couples, issues pertaining to ethnicity have been particularly marginalized in studies of South Korea's digital divide study. However, interestingly enough, current studies are stressing the importance of multicultural issues as they relate to the digital divide. For example, the only study published in 2009 to focus on ethnic issues considers the South Korea's multicultural context by shedding light on an alternative for deeper understanding of the digital divide.

*Table 1.*

### **Dimensions of the Digital Divide**

	<b>Global</b>	<b>Region</b>	<b>Class</b>	<b>Age</b>	<b>Gender</b>	<b>Race</b>	<b>Others</b>	<b>Total</b>
Frequency	7	8	31	22	24	1	5	98
Percentage	7.1%	8.2%	31.6%	22.4%	24.5%	1.0%	5.1%	100%

Note: multiple answers (ranging from zero to three).

Understanding the digital divide in the structural context. The second wave of digital-divide studies in South Korea turns its attention to the relationship between individuals and information, and the relationships among those who use information to connect with each other. Thus, the second wave highlights the importance of influence on labor and how this factor affects individuals' ownership and use of telecommunication technology.

Table 2 shows the number of studies that paid attention to labor as it pertains to the digital divide in South Korea. Our results show that the studies on the digital divide and its relationship with labor constituted 21.8% of the total sample. However, we state that it is necessary that the studies of the digital divide consider a labor factor in socio-cultural contexts. In fact, we found that most studies simply added the labor factor as part of the participants' SES in their analysis as one of variables.

The only study of Kim (2009) is found to explore the cultural context of working conditions of women below middle class. Her study sheds light on the labor context of the digital divide by investigating digital gaps among Korean women workers according to gender and work type. It should be noted here that permanent workers are clearly distinguished from temporary workers in South Korea, and the unofficial/social rewards including fringe benefits are polarized according to the respective working status of each. Specifically, guest workers usually work in small factories in suburban areas. This indicates that they might have been under the dual discrimination, which is a particularly important issue, just because structural working conditions can be expected to determine how immigrants access and use digital information and devices.

Table 2 shows the extent to which a number of factors relevant to the digital divide in relation to education have been discussed. Our findings show that overall 36.4% of the digital-divide studies discuss the educational factor. This emphasis on the educational factor is due to the stress on education in South Korea. As is well known, South Koreans are eager to make sure that their children receive a sound education because education is a social good available to the masses. However, in spite of the symbolic and actual importance that education has in Korea, the educational factor has not featured as a crucial factor in Korean digital-divide studies. As shown in Table 2, these studies were relatively few (36.4%),

as compared with the 63.6% of studies that did not consider education.

An understanding of education in the South Korean context is necessary if a deeper understanding of the cultural context of the digital divide is to be obtained. In South Korea, the degree of education is highly associated with an individual's future SES, because Korea depends heavily on the labor force for developing its economy. That is, economic capital is compounded with cultural capital, which leads to the structural reproduction of socio-cultural capital, and thus, education is a crucial component of individuals' socio-cultural capital. Currently, in regard to information technology, the differentiated patterns of use reflect educational inequality. Accordingly, it is important to highlight that it is insufficient to simply discuss the digital divide as it pertains to educational disparities; therefore, we discuss the digital divide in the context of the structural educational environment's effects on the relationship between personal factors and information technology use of immigrant workers and intermarriage immigrants who are especially marginalized in the field of education. However, our finding shows that the studies that consider this issue do not go far enough in their consideration of education and that few studies concentrate on the educational context. Most studies use the education factor as one of a number of independent variables; such that they hardly account for how education is related to the digital divide at either the micro and macro level. Thereby, our analysis raises the question of how multicultural families and individuals can be connected to education in a structural context reproducing digital inequalities.

Table 2.

**Considerations of the Digital Divide  
in the Labor/Educational Context**

Context of		Yes	No	Total
Labor	Frequency	12	43	55
	Percent (%)	21.8%	78.2%	100%
Education	Frequency	20	35	55
	Percent (%)	36.4%	63.6%	100%

Technological determinism or socio-cultural constructivism? The digital divide has been discussed in terms of structurally complicated and overdetermined factors in relation to people and technology. As shown in Table 3, we categorized the previous studies on two axes: technological determinism and socio-cultural constructivism. By doing so, we explore a cognitive mapping for the current research on South Korea's digital divide. As a result, we found that studies considering both aspects constituted 54.9% of the total sample. Technological determinism studies accounted for 15.7% and socio-cultural constructivism studies accounted for 29.4%. Most of the studies paid attention to empirical verification as evidenced by their use of numeric models and/or statistic indexes. For example, Jung (2009) investigated the digital divide by reinterpreting the S-curve, and Moon (2004) verified the digital divide by using Gini's coefficient and the Lorenz Curve.

There were more studies based on socio-cultural constructivism than we expected. However, it should be noted that these studies make limited theoretical contributions, because they simply utilize some relevant concepts from socio-cultural theories, even though those could discuss the context of the unique socio-cultural use of information technology by drawing on Bourdieu's cultural capital theory, political economy, cultural studies, and/or feminism.. For example, one study might be better if it further interpret the digital divide as implicated in reinforcing men's privileged position vis-à-vis women in the workplace.

Another finding addresses the point that most of the studies are limited in that they only apply the concept of the digital divide and/or the theory of diffusion of innovation and they focus on measuring information inequality on the purpose of indexing. This is the case even for those studies that investigate the intercultural digital divide and propose alternatives to explaining the cultural aspects of digital inequality by criticizing the technology-centered studies. Furthermore, few of the studies consider digital inequality within the specific context of the workforce/class. Although quite a few studies did include a class factor in their research model, they did not take the step of considering the implications of this step in any systematic way. Our analysis also showed that none of the studies focus on the digital workforce divide in reference to education capital as it relates to information technology. When considering generation gap, it is

necessary to consider how the specific culture of each generation affects access to and use of information.

Table 3.

### Theoretical Standpoints

	Technological determinism	Socio-cultural constructivism	Both	Total
Frequency	8	15	51	55
Percent	15.7	29.4	54.9	100

Type of Approach to the digital divide. By subdividing the sample into public-interest-related studies and market-oriented studies, we determined that former group constituted 76.3% of the total, indicating that information technology should be both accessible to all and of equal benefit to all (Table 4). Contrary to our expectations, the industrial approach accounted for only 1.8% of the total, which reflects the tendency of not discussing the digital divide from a business perspective in Korea. In other words, Korean digital-divide studies are largely based on public interest, at least in theoretical terms. Public-interest-oriented studies function to justify public support for minorities in regard to gender, ethnicity, class, disables and region. Only one study investigated the market efficiency of ICT. In this regard, the digital-divide studies focused on South Korea explore the best way to guarantee public access and cultural equality for various minorities. Related to this work is the question of how to support multicultural contemporaries in terms of ICT, as there is a need to extend the concept of public interest in order to apply it to the dramatically changing multicultural environment of South Korea.

Table 4.

### Approaches to the Digital Divide

	Industrial approach	Public interest approach	Both	Other	Total
Frequency	1	24	18	12	55
Percent (%)	1.8%	43.6%	32.7%	21.8%	100%

Solutions or alternatives to the digital divide. We also examine whether any of the studies proposed alternatives or solutions to the digital divide. Table 5 shows that most studies (70%) did propose alternatives. However, they quantified the digital divide from which some minorities suffer, and used to limit their concept in traditional concept of public interest. For this reason, we argue that Korean digital-divide studies were hard to cover all the current minority groups such as the *Sae-Teo-Min* (North Korean refugees) and intermarriage immigrants and their offspring.

Finally, we discuss in detail the alternatives to the digital divide offered in these studies. That being said, 27.1% of the studies considered the effects of public access policies, 22.4% considered education about information literacy, and 16.5% considered education on information access (as shown at Table 5). Our finding shows that these studies generally paid attention to universal access to technology and the acquisition and use of skills necessary to use it. However, there is a need to discuss whether these technology-centered approaches are useful in a multicultural society. As Rodino-Colocino (2004) pointed out, the digital labor divide is a structural problem such that technology-centered approaches cannot ameliorate it.

As shown, universal public access was most frequently presented as the best solution. But, the fact that numerous studies emphasize universal access reflects the limits on present discussions pertaining to universal access. Many of the studies focused on digital divide in relation to the social structure, concentrating on domestic issues such as geographical inequality and the unequal distribution of digital devices. We also point out that few studies focus on how the educational and cultural divides eventually lead to digital labor divide. Therefore, we take the position that solutions to the digital divide would differ depending on whether minorities marginalized in the workplace were the focus or if the majority were so. That is, by considering the relative cultural diversity and the labor market conditions obtaining in Korea, we expect to establish how these two major factors are interrelated specifically in terms of South Korea's multicultural environment.

Table 5.

### Alternatives or Solutions to the Digital Divide

		Frequency	Percent (%)	
Suggestion of	Solution	38	69.1%	
	No solution	17	30.7%	
	Subtotal	55	100%	
Type of solution	Global or macro bonds	3	3.5%	
	Public access policy	23	27.1%	
	Content	9	10.6%	
	Pedagogy	Information access	14	16.5%
		Information literacy	19	22.4%
	Other	17	20.0%	
	Subtotal	85	100%	

Note: multiple answers (up to four answers for solution).

### Discussion

This study used a meta-analysis method to examine the literature covering the digital divide or digital inequality in South Korea from 1990 to the present. The authors assumed that this society should consider how the problem of the digital divide is being interpreted and played out, and in this regard it is necessary to pay attention to changing structural environments, that is, the multicultural society which is emerging in the country. The digital multicultural divide expresses the need for an extended concept of public access and further discussions of the multiple socio-cultural factors that are reifying the divide beyond the limitation of technological determinism (Gorski, 2002). According to Selwyn (2004), there is a need to reconsider the meaning of technological use/access/engagement. In our view, it is imperative to explore technological engagement in association with various kinds of social, economic, and cultural capital, wherein reconfigured education and labor could play an important role in reproducing digital inequalities. Furthermore, in this regard, Korean digital-divide studies evince a methodological bias. Our analysis shows that most studies overwhelmingly applied a quantitative method. However, to carefully investigate the

digital labor divide and/or multicultural digital divide, we have to understand how the divide is structured or institutionalized through individuals', particularly guest workers' and intermarriage families', daily lives.

Furthermore, our results indicate that a full-scale attempt to discuss the digital divide in South Korea as a society that is becoming increasingly multicultural has yet to in academic studies. Most articles considered the digital divide as inhering in demographic factors including class, gender, and generation. Race and the context of multiculturalism are rarely discussed.

In regard to the theoretical discussion of the digital divide, half of the sample articles chose both technological determinism and socio-cultural determinism. Nevertheless, the majority of the articles still did not aim at reflecting the issues of the digital divide in the context of labor and education – each of which most certainly play an important role in structurally constructing and perpetuating on micro and macro levels. As shown in the result that investigates how many articles suggest an alternative or a solution to the negative effects of digital inequality and/or information access that the divide bring abouts, nearly 70% of the research studies expressed an alternative/solution that drew on the idea of public access or universal service. Simultaneously, they considered the provision of education related to technology access and skills and information literacy for the have not or social minorities to be central to this effort.

In conclusion, although the structural changes taking place in South Korea wherein the country is becoming a more multicultural society are significant, research on the digital divide in this country has paid scant attention to multiculturalism or the diaspora. Proposed approaches to resolving the digital divide rely on public access policies or instrumental education to improve technology skills. However, it is our position that ethnic minority groups tend to be extremely marginalized in terms of labor and education in general – realities that are only exacerbated by the digital divide.

Communication technology is a valuable tool through which lower-income ethnic minorities acquire useful information if specific barriers are reduced. As noted, however, both first- and second-wave discussions of the digital divide focus merely on access to technology without deeper consideration of associated complicated conditions. That is, first-wave scholars paid most attention to hard tech-

nological determinism, whereas the second-wave concentrated on the cultural aspects of the divide. Despite these different emphases, scholars of both waves tended to subscribe to the view that making technology more accessible to more people would be sufficient to address digital inequality. It is against this background that this study conducted a meta-analysis of these studies, reviewing the academic journal articles that address the digital divide published between 1990 and 2010. Based on this analysis, this study categorizes academic discussions of the digital divide in South Korea according to three waves. As previous studies have noted, first-stage discussions of the digital divide focused on technological determinism, whereas the second stage shifted focus to various contributing cultural factors, i.e., gender, education, geographic residence, and so forth. As has been established, the digital divide is determined by and determines four major factors: class, gender, generation, and region (including differences among countries at the global level). It is produced and reproduced, therefore, by complicated processes that have not been considered in any detail. Even though the digital divide is primarily affected by socio-economical factors that influence technological accessibility and, use, questions remain regarding who is capable of using the information gained in technological arenas on the basis of a proper understanding of the information (environment) rather than who has easy access to information and technology or the question of who can get more information (Kim & Kim, 2007, 123). However, during this second wave, researchers were most concerned with establishing how these factors are associated with technological access.

In the third wave, from the mid-2000s onward, scholars began to see digital inequality as implicated in the cultural reproduction of societal structures that reinforce and restrict the cultural, economic, and social practices of ethnic minorities. For scholars of the third wave, the structural critics, earlier studies did not pay sufficient attention to ethnic minorities, who because they tend to be less educated and make less money than other members of society are most vulnerable to being on the wrong side of the divide. For the structural critics, then, existing discussions about the digital divide suggest that it is the responsibility of the individual to acquire and improve on a cultural and labor skills set. Therefore, in the present study, we argue that efforts to close up digital inequality should take into ac-

count the specific problems that ethnic minorities confront and how lack of access reproduces and is reproduced by existing structural conditions. Of the structural conditions, labor and education need to be stressed as crucial factors in accounting for the multicultural digital divide. Although individuals can improve their skills by accessing digital networks and by using digital technology, we can hardly account for the structural relationship between humans and technology without considering the labor and educational contexts.

The present study's findings suggest new directions for further studies on the digital divide. First, this study demonstrates the importance of taking a careful look at the structured digital experiences of individuals in terms of their socio-cultural contexts. Overall, the present study supports a socio-cultural constructivist approach rather than the technologically deterministic approach discussed in many of the studies (e.g., Goode, 2010; Kvasny, 2006; Light, 2001; Rodino-Colocino, 2006). By highlighting the importance of considering multilayered dimensions of the digital divide associated with specific socio-cultural contexts, this study critiques the literature itself as partaking in some of the inequalities inhering in the divide and offers a way to deconstruct the divide in order to find a way toward viable solutions.

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## IN-FAMILIES GAPS AND DIVIDES: USE OF DIGITAL INFORMATION IN MOSCOW HOUSEHOLDS

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### Abstract

*Digital divide is considered by scholars in different aspects. Castells and Himanen consider it in the socio-political aspect. The researchers see the reasons for the fact that the right to obtain digital information of certain members and groups of society is infringed due to the economic inequality, technological lag, social/educational passiveness and other features, characteristic for the non-democratic forms of political organization (Vartanova, 2003).*

*Other aspects of the digital divide were analyzed later. Scholars point at origins of this phenomenon connected with gender (Smirnova, 2011), generation (Vartanova, 2011), world outlook, everyday life, anthropological and other individual-centric issues (as a counter balance to socio-centric ones). Thus, individual-centric reasons for the digital divide include non-curiosity and unwillingness, lack of skills, specific interests, habits etc.*

*One of the most interesting and less studied issues is the problem of the use of digital devices in a big city. Having a relatively unified political, socio-economic and educational context as well as an equal access to digital platforms, the members of a household within one city may use digital gadgets in a different way.*

*The paper attempts to analyze the use of digital technologies by members of the same families but representing different generations and mental models. The ongoing research is carried out in several Moscow families and is based on the ethnographical method.*

**Keywords:** *digital gaps, digital divides, digital information, Moscow family, Moscow households, media ethnography*

### **The post-socialist theory of family**

It is impossible to consider a statistically average Moscow family without the reference to the theory of post-socialistic transformation of society. Many digital gaps and divides in media consumption in Moscow families are explained by still formulating state politics, social sphere and mass media values, presentations about family, roles and functions of men and women in family, children. Often challenges and oppositions inside Moscow families are the result of not just individual, but social factors of transition period. Media consumption is just a litmus paper of the society's restructuring and family being a structural component of this system.

Most sociologists determine a Russian family as «neotraditionalistic» (Semeinye uzy, 2011). In Russian media of the post-socialist period, political and academic discussions over and over again underlined the growth of the social importance of traditional roles of women as wives, mothers, the return economic responsibility for the family's provision to the men, the priority of women's reproductive function. The shift back to the traditional family is considered as one of the strategies of society's modernization, it's update and disposal from communistic authoritarian hangover. The family is absolutized as one of the highest social values and set against the deviant out-families forms of life organization.

### **Information and communication infrastructure of Moscow**

The contemporary urban citizens in Russia, in particular Muscovites, are widely using various devices to access and present in media space.

*Table 1.*

#### **Dynamics of the availability of different media in an urban family**

<b>Media</b>	<b>2002</b>	<b>2008</b>
Mobile phone	12	86
DVD/VHS	46	70
PC	11	46
Internet access at home	5	33
Pay TV	13	31

*Source: Kolomiets, 2009*

The statistical data of current interest concerning the retail commodity circulation by sectors demonstrates, that Russian acquire ICTs devices beyond belief very active. The growth increase in several sectors attains in dynamics about 90 % comparing the last year.

*Table 2.*

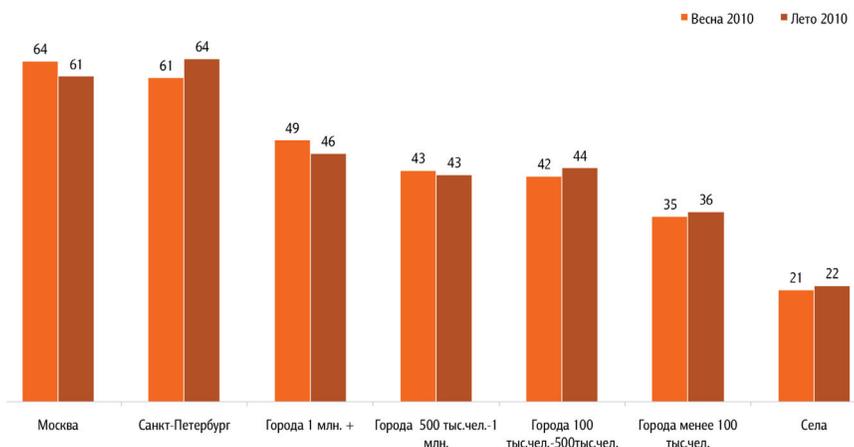
**Retail commodity circulation by sectors (I quarter 2011)**

	Q2 2010 M.RUB	Q3 2010 M.RUB	Q4 2010 M.RUB	Q1 2011 M.RUB	Q1 11 / Q1 10 ±, %
Consumer Electronics (CE)	29,701	42,615	63,864	60,160	↑ 59,9
Photo (PH)	8,557	11,230	12,243	15,750	↑ 89,1
Major Domestic Appliances (MDA)	34,695	48,365	53,849	43,242	↑ 27,8
Small Domestic Appliances (SDA)	19,067	25,126	22,065	33,189	↑ 89,0
Information Technology (IT)	41,774	54,354	78,640	84,894	↑ 69,8
Telecommunication (TC)	36,952	48,212	52,511	50,372	↑ 18,1
Office Equipment & Consumables (OE)	13,355	13,442	17,809	17,399	↑ 9,2
GfK TEMAX® Russia	184,101	243,344	300,980	305,006	↑ 48,1

Source: Mediarevolution, 2011

In terms of internet users amount Moscow slightly relinquishes to Sankt-Petersburg. But in terms of equipment status with wi-fi public spots or availability of mobile devices with internet access Moscow no doubt becomes a leader.

Dynamics of internet users, millions, age>18



Source: Rumetrika, 2011

### **Methodology and theoretical apparatus**

We have conducted an ethnographical research of several Moscow families for the purpose of this paper. During the long period of time (about 1 year) we have observed, how family members have been consuming different media. The purpose of our ethnographic observation was not just to fix quantitative data (duration of media consumption, classification of consumed content in different types), but to understand the motivations to consume and its effects.

We have structured the collected data in several models of families. These models are not determined only by the level of income or education. They are determined by the criteria of family's communicative practices realization – communication between the members of family through digital media and digital media consumption by members of family. One of our hypothesis is that the varieties of media consumption are based on the anthropology and ethnography of each particular family. This idea is opposed to the social and economic factors of the influence on media consumption because of the domination of the political economy paradigm in media studies.

As a result we have distinguished 5 models of Moscow families. These models demonstrate the results of our survey and are very

significant for the understanding of the nature of digital media consumption by their members. Totally we observed 10 families.

### **The first model: fathers and sons**

In most of the analysed families the relations between the members might be described as miscommunication. This miscommunication encounters at all three generation levels of family. This circumstances influence the media consumption in the following way:

- In cases of deficit of media devices in a household each device has its fastened owner (the elder brother reluctantly allows the younger sister to use the computer or doesn't allow at all);
- The relatives removed from each other in distance started to initiate intrafamily media communications for short term (the grandson started to communicate with the grandmother on skype, but quickly this type of disappeared);
- Preference to old, instead of new channels of communication (grandsons marked inability of grandmothers and grandfathers to write sms-messages "correctly" (in particular competently using all possibilities of virtual language – for example, smiles; the desire to train them in their sms-literacy was absent);
- Communications by phone (stationary and mobile) as the most widespread type of communication between family members);
- The parents, wishing to master the Internet and using media devices, didn't meet stable support and the help from the children – quickly lacking enthusiasm;
- An obvious excess towards a digital content at younger generation, an excess towards old media at the middle and the senior generation;
- Absence in balance of media consumption between digital and non-digital content by different generations;
- Younger generation initializes the media activities by the senior and middle generations;
- Absence of unified interpretation of messages of mass media;
- Absence of a unified worldview;

It is necessary to name a sincere desire of the majority of members of a family to seize communicative abilities of the new media environment, but absence of due diligence both in studying from one, and in rendering assistance from others.

### **The second model: all the best to children**

This model is very important for understanding media consumption by a Moscow family. Frequently parents who do not have personal media devices and don't possess skills to use correctly, aspire to get these devices for the children. Their motivation is based on their view, that devices are necessary for study and on their desire that children don't lag behind in maintenance with necessary devices among peers.

This type of media consumption allows us to describe the offered model as follows:

- The absence of realistic understanding by parents about possibilities of devices (parents think that their children spend time in the Internet studying. The majority of parents don't suspect that children visit porno sites, play games or spend time in social networks; grandmothers and grandfathers don't know that a mobile phone is possible to buy cheaper – as it is for them a communication medium, and for their grandsons this is a way to integration tool and familiarizing with the social space);
- An interdiction by parents to consume Internet content for their children – as the form of participation of parents in the agenda setting (it is characteristic for young parents and children of younger age – digital natives);
- Division to “children's” and “adult's” (parents who have no possibility to get to itself an expensive device but which have got it for the child, don't aspire to master a device for themselves, realizing that the given thing is not intended to them);
- An obvious excess towards a digital content at younger generation, an excess towards old media at the middle and the senior generation;
- Absence in balance media consumption between a digital and non-digital content on any of levels of generations of a family.

### **The third model: the «West European» type**

The so-called West European type of Moscow families is extended enough. As a rule the family is well equipped with various devices – from mobile phones to ipads – at the level of two or even three generations. If financial well-being of such a family was built steadily both equipment and ability of their correct use formed. But even in such a family the preference to communications is given on means of old channels.

Especially it concerns discussion on serious themes, problems or a resolution of conflicts. The child who is online, but answering messages to parents is postponed, causes in parents feeling of alarm and desire immediately to call it, having used a mobile phone or even to the stationary. Old ways of communication are perceived as more operative and authentic than new.

Consumption of mass media in such families is unified in terms of content in the greatest image:

- The information agenda at all three levels of a family is formed by consumption of both digital and non-digital content;
- An excess in media consumption towards a digital content at a younger generation;
- Balance of media consumption of digital and non-digital content at middle generation;
- An excess in media consumption towards old mass media at a senior generation;
- Domination of interest to political news online at middle and senior generation in comparison to the younger.

### **The forth model: families with problems of access and skills – is there a problem?**

Non-uniformity in a digital environment is determined also by sociopolitical features of the whole Russian Federation and its regions development as it is not homogeneous. Many teenagers in 17-years of age come to Moscow to go into higher education. One of such cases also became a subject of our ethnographic supervision.

Mahomet is from Dagestan. Having being accepted in the high school in Moscow, he has appeared shipped in other media space, alien to his native land. In Dagestan he was an inactive Internet and PC user. It is curious that he was an active user of mobile Internet –

dialogue on icq, downloading of ringtones and music. This results from the fact that such device as a mobile phone is widespread. Possibility to afford other devices – is not for all. But even such kind of activity as using standard Word software Mahomet used to make only at school – there was no computer at home.

In Moscow Mahomet, having come under to fashion, has bought an Ipad. Observation over using this device by Mahomet makes us draw following conclusions concerning the given model:

- Despite the lack developed skills of confident using of personal computers, young men under certain circumstances are capable quickly and competently to master even such intermediate and specific devices as an ipad;
- Confident ipad using is not connected confident PC usage (when it is necessary for Mahomet to work on the personal computer because of insufficient experience this kind of media activity is difficult);
- Using ipad can be universal (music listening, TV-content viewing, icq, social networks) and not to assume initially assumed by the producer activities (reading of newspapers online).

This case allows to look at a problem of access and skills in a new way. In certain cases, especially if it is a question of the young generation, skills directly depend on access. And access should be considered in frameworks not only the political economy theory, but also cultural, in particular concepts of values. Even in Dagestan Mahomet could afford himself an ipad, but the given motivation was generated only in Moscow.

### **The fifth model: man vs. woman**

According to Rosstat, the average monthly salary of the man in Moscow is 44 360 rbl., and women – 35 613. The difference practically in 10 000 is essential enough. We investigated two unlike cases. Nevertheless, it was possible to allocate common features as well.

In the first case we observed, how the man in the traditionalistic family was the active user of a digital content. As a great judge of high technologies he always initiated acquisition of digital devices. This type of a husband is possibly described as «kidalt» (Vartanova, 2010). As a result his household has become very well equipped by information-communication media devices. His wife always per-

ceived acquisition of the satellite TV, expensive computers and so forth as a man's entertainment and concerned such toys critical. She never desired to switch the channels satellite, or read news in the Internet in spite of the fact she daily was the witness of the same activities her husband did. These actions caused the protest in it. She has got used to associate herself with a family, care of children, cooking and cleaning. Consumption of mass media by the woman in the given family was reduced to using old media – printed newspapers and broadcast TV.

In the second case, we had a family where the woman was enough successful in career building. She daily had to use the computer and the Internet at her work place. Her husband also was successful in his career, but his working duties weren't reduced to the necessity to use digital devices. As a result the given household, despite it is equipped with a laptop, didn't differ from active user ability. The available laptop, as a rule, stood idle. The woman preferred to do working affairs on work and, possibly, feeling authority of the husband, didn't like to initiate media activity in the house.

As a result of the analysis of both cases we can draw the following conclusions concerning the set model:

- The authority of the man in a family is strong enough: the woman doesn't aspire to initiate by herself communicative and media activity by means of digital devices;
- Media activity of the woman in a family is less or equal to the husband's, despite of a possible different situation at the work place;
- Media consumption in the given type of a family of the woman is in a stagnation stage;
- The man is an «opinion leader» and gatekeeper of the information stream.

## **Conclusions**

As a result of the conducted research in several Moscow families it is possible to make several general conclusions:

- In terms of digital content consumption it is difficult to define similar practises among Moscow families. Experiences of each family in the sample is unique;
- Within one family there are various gaps and divides. They are connected not only with the age, gender, sociopolitical

- factors, but also with mental and behavioural factors, family and individual values;
- Being in many senses a uniform cell of a society, we didn't manage to meet a family where media consumption would be completely similar for different generations. The least quantity of excesses had been met only at a family of the West European type;
  - Initiation of digital content consumption is frequently proceeded from younger generation and is the sign of benevolent relations between generations in a family. The warmer relations in a family are, the higher is the digital media consumption at different levels of the families generation.

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