

Reducing the Digital Divide: What Have Adult Children Done for Their Middle-aged Parents?

Huanhuan Dou^{1,2*} Shizhou Wan²

¹*School of Binary Graduate, Binary University of Management & Entrepreneurship, PuChong, Selangor 47100, Malaysia*

²*School of Culture and Communication, Chengdu Institute Sichuan International Studies University, Chengdu 611844, China*

*Corresponding author. Email: bbd568@126.com

ABSTRACT

Internet technology has penetrated into daily life; however, disadvantaged digital groups are experiencing more and more difficulties in the context of digitization. A survey was conducted to explore the support of adult children for their middle-aged parents to adapt to digital life in China. The results show that adult children's support for parents mainly focus on economic support, educational support, emotional support and advice. In terms of financial support, there is no significance between the male and the female; respondents pay more attention to the skill of social communication by smartphones to access the Internet; in addition, the respondents who are the only child in the family do not give more emotional support than the ones with siblings; furthermore, income and education are not statistically significant predictors of advice.

Keywords: digital divide, smartphone use, intergenerational support, middle-aged parents, Internet use

1. INTRODUCTION

The Internet has become an important social context in daily life. According to the 45th report from CNNIC, the number of Chinese Internet users has reached 904 million, and Internet penetration rate has reached 64.5% in March, 2020. Smartphones have become the main device to access the Internet due to their mobility and portability. Actually, the mobile Internet has helped to realize the connection and aggregation of people on the move, providing various possibilities for people's needs. The proportion of Chinese Internet users using mobile phones to go online reaches 99.3% [1], which implicates that smartphones will offer a great opportunity to narrow down the digital divide. However, of all Internet users, middle-aged and elderly ones over the age of 50 account for only 16.9%, of which the elderly over 60 account for even less—only 6.9%.

Though there is no uniform definition to describe these groups who have difficulties in surfing the Internet, researches all admit there exists a digital divide. The deeper the influence of the Internet, the more difficult the daily lives of those vulnerable groups.

The knowledge gap is universally taken by scholars as the first theory to explain the difference in spreading information through the groups. Recently, more and more scholars applied this hypothesis to Internet use and the adoption of specific apps, such as WeChat. Zhou, Y.Q.[2] finds that elderly women are more likely to adopt WeChat than elderly men, which is contrary to traditional findings of innovative adoption research. Moreover, many western scholars often take racial factors into account.

Besides studies on Internet adoption, they also find that disadvantaged groups are still struggling with the social context in reality. Take Norway for instance, which has high Internet and Facebook connectivity. Some elderly Norwegians believe the Internet (such as SNSs) increases contact with family and friends, but perceive lack of competence as a barrier.[3]

Therefore, the trend on digital divide has transitioned from whether people possess Internet access devices to whether they have the skills to use the Internet. The benefits and ways of narrowing the digital divide have attracted the interest of researchers.

Numerous studies have documented that using ICTs like computers[4] and mobile devices[5] connected to the Internet has positive effects on the well-being of the users, especially for elder adults. And social support is usually taken as a mediator, which plays an indirect role in Internet use and well-being. Social support offers emotional links between elder adults and other people, and the main sources of social support for elder adults are family and friends. Mohamad, N. et al.[6] review 22 articles, finding that intergenerational support is mainly provided by grandparents to their grandchildren in Malaysia. Lou, V.[7] finds that emotional support and appraisal support from grandchildren contribute to life satisfaction in Hongkong. Furthermore, Zhou, Y.Q.[8] also notices that “a quiet revolution” is happening within the family in Chinese mainland. In terms of learning new media knowledge, children feed their parents back significantly more than parents nurture their children. Ronning, W.M., and Sølvsberg, A.M.[9] claim that digital vulnerable groups are worried about being isolated and

excluded from society and activities before they become a part of the digital world.

In Chinese traditional culture, family is often considered as a main source of support. However, there is little research from the perspective of investigating the endeavor made by adult children to their middle-aged parents. Furthermore, smartphones are becoming more and more popular. They are a very effective tool to access the Internet and narrow the digital divide because of their low cost and portability. Therefore, the purpose of this study is to research the relationship between the demographic variables and inter-generational support. And the research question is: what do adult children do in helping their parents become members of the Internet world through using smartphones?

2. LITERATURE REVIEW

2.1. Digital Divide

Middle-aged adults still lag behind younger generations especially with regard to Internet use in China.[10] The main reasons for the digital divide among disadvantaged groups, especially middle-aged and elderly groups, include costs[11], unfriendly design[12], physical cognitive impairment[13], lack of confidence[14] and media discourse[15].

2.2. Intergenerational Support

Where there is need, there is support. Financial support, emotional communication and tool support to parents are three main forms of intergenerational support [16].

Fingerman, K.I. et al.[17] point out that intergenerational support includes emotional support, advice and practical help in a daily context.

Therefore, based on some previous studies, this study focuses on examining the relationship between demographic variables and intergenerational support. We divide intergenerational support into financial support, educational support, emotional support and advice.

Firstly, we have mentioned that cost is the greatest barrier for access to the Internet. Although smartphones are predominantly less expensive than laptops, they may still be relatively costly. Therefore, we expect that disadvantaged digital groups can receive more financial support from their adult children. Secondly, to provide educational support to cultivate the skills to access the Internet means adult children should spend more time with their parents and even have a higher level of education. Thirdly, as a result of the change of family structure in China, the number of one-child families has increased, and we predict the family size will correlate with intergenerational support. Lastly, we take advice as a predictor, because advising is very common interactive behavior in daily life. Therefore, we adopt the following

intergenerational support construct and hypotheses for this study:

Hypothesis1: Demographic including (a) gender, (b)income, (c)education, (d)marital status, (e) family size, (f)co-residence are associated with financial support.

Hypothesis2: Demographic including (a) gender, (b)income, (c)education, (d)marital status, (e) family size, (f)co-residence are associated with educational support.

Hypothesis3: Demographic including(a) gender, (b)income, (c)education, (d)marital status, (e) family size, (f)co-residence are associated with emotional support.

Hypothesis4: Demographic including(a) gender, (b)income, (c)education, (d)marital status, (e) family size, (f)co-residence are associated with advice.

3. METHOD

3.1. Sample

A computer-assisted questionnaire was conducted through SurveyMonkey from October 1 to October 4. The convenience sampling was posted by a web-link in the WeChat, and it's convenient for the respondents to give their replies.

In the study, a total of 259 respondents completed the survey. Two respondents have not reached the age of 18 and do not belong to the category of adult children, so they were excluded. The respondents are slightly more likely to be female (n=257, female=59.10%) and are 27.95 years old on average (M=27.95, Max=55, Min=18, SD=7.057). More than half (54.1%) of the respondents report a monthly income less than 3500 RMB. Only a small percent (14.8%) are the only child in the family, 45.9% are married, and nearly half of them (49%) live with their parents. In addition, over two thirds of the respondents (79.7%) have completed higher education.

3.2. Measures

Financial support: Respondents state "yes" or "no" to 2 items: 1. "I bought a smartphone/smartphones for my parents (at least one living parent) in the past two years" ; 2. "I paid the network for my parents (at least one living parent) in the past two years". The results show that 65.8% respondents once bought a smartphone/smartphones for their parents and 71.2% paid for the Internet.

Educational support: There are 4 items with five-level Likert scale, i.e. the extent of agreement(1=strongly disagree to 5=strongly agree): 1. "I taught my parents to download and install apps in the past two years."(M=4.16, SD=1.043); 2. "I taught my parents to communicate through smartphones by using social media(such as Weibo, Wechat) in the past two years."(M=4.22, SD=1.097); 3. "I taught my parents to use smartphones to generate contents in the past two years."(M=3.81, SD=1.283); 4. "I taught my parents smartphone skills to facilitate life, such as

mobile payment, in the past two years.”(M=3.60, SD=1.372) disagree to 5=strongly agree). 1. “I communicate frequently with my parents using mobile apps, such as Wechat.” (M=4.11, SD=1.156); 2. “I will actively teach my parents to use smartphones.” (M=4.07, SD=1.097); 3. “I am very patient when my parents ask me how to use smartphones.” (M=4.04, SD=0.945)

Advice: There are also 3 items to be measured by 5-level Likert scale. 1. “I often advise my parents to pay attention to the security of personal information when using smartphones.” (M=4.16, SD=0.976); 2. “I often advise my parents to identify rumors when using smartphones.” (M=4.19, SD=0.973); 3. “I often advise my parents to care for financial security when using smartphones.” (M=4.17, SD=1.049)

4. RESULTS

The reliability coefficients (Cronbach’s) were calculated in order to determine the internal consistency of the

Emotional support: It includes 3 items, for each of which respondents state the extent of agreement(1=strongly constructs. The results($\alpha =0.851$)show that the internal consistency of the measured variables is reliable.

A T-test analysis and an ANOVA test were conducted to address hypotheses. In general, we used the T-test to analyze the association between (a)gender, (b)marital status, (c)family size, (d)co-residence and inter-generational support. The results partly support our hypothesis. There is significance($p=0.005$) between the female and the male in emotional support, while the single and the married differ in financial support. However, there is no significance between co-residence and intergenerational support. The results also apply to the correlation between family size and intergenerational support. The results are showed in table 1.

Table 1 T-test of Inter-generational Support

	Financial support		Educational support		Emotional support		Advice	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Gender	.298	.585	4.215	.041	8.076	.005	1.544	.215
Marital	28.537	.000	1.346	.247	2.189	.140	.122	.215
Family size	1.910	.168	2.193	.140	.543	.462	1.041	.309
Co-residence	5.768	.017	1.675	.197	2.368	.125	3.085	.080

In addition, an ANOVA test was conducted to analyze the association between (b) income, (c) education and intergenerational support. The results are showed in figure 1. The financial support ($F=4.834, P=.000$) and emotional support ($F=3.482, P=.003$) differ with income. Furthermore, Tukey pairwise comparison reveals that the group with an income below RMB2000 do significantly more for their parents than other income levels, while there is no significance between different education levels and intergenerational support.

Financial support. Specifically, A chi-square test comparing the female and the male shows that there is no significant difference in financial support($\chi^2=0.046, p=.109$). Thus, H1a is not supported. However, there is a significant difference between the single and the married($\chi^2=9.961, p=.001$)—unmarried people give their parents more financial support, so H1d is supported. The linear regression analyzes the impact of education and income on economic support. Accordingly, H1b is supported, while H1c ($p=.147 > p=.005, r=.007$) is not supported.

	Financial support		Educational support		Emotional support		Advice	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Income	4.834	.000	2.978	.008	3.482	.003	2.522	.022
Education	.267	.849	1.480	.221	1.770	.153	.430	.732

Figure 1 Results of the VNVOA Test for Intergenerational Support

Educational support. We predict (a) gender, (b)income, (c)education, (d)marital status, (e) family size, (f)co-residence are associated with educational support. It needs to be explained that these items are used to measure the behavior to teach parents. But it doesn’t mean respondents really help parents master these skills to access the Internet. From the descriptive statistics, we find that respondents are less likely to teach more skills except social communication. However, marital status has no significant impact on educational support($\chi^2=15.807, p=.008$), but the single(54.9%) seem to give more educational support than the married(45.1%). Therefore, H2d is not supported.

Emotional support. Interestingly, the female and the male also present no significant difference in emotional support. When summarizing the descriptive statistics to get more details and measuring the item (frequently communicate with parents), we find that the result for the single ($M=4.13$) is slightly higher than that for the married ($M=4.07$), but the married surpass the single for both of the two items—“positively help parents” and “support patiently”. In addition, the individuals living with their parents are more likely to communicate on a smartphone than those who are not.

Advice. A chi-square test comparing the female and the male show that there is significant difference in financial support ($\chi^2=131.765$, $p=.001$). However, income, education, marital status, family size and co-residence are not statistically predictors of advice. Therefore, H4b, H4c, H4d, H4e and H4f are not supported.

5. DISCUSSION AND CONCLUSION

Most findings regard financial support as the most common type of intergenerational support. Income significantly affects financial support, which coincides with findings that adult children’s income is an important factor to decide the financial support they give to their parents.[18] In addition, marital status creates differences in financial support. The results reveal that the married are less likely to give their parents financial support than the single. Prior studies[19][20] take gender as an important variable to predict the financial support. However, the results reveal that different genders do not show significant differences in financial support.

Depending on changes in family structure, we predict the ties between the only child and parents will be closer, and the only child in the family will support his/her parents more, helping them with their digital life. However, there is no significant difference between people who are the only child in the family and their counterparts with siblings in providing parents with economic support and emotional contact. Whether parents’ benefit in the digital life is related to the number of children in the family needs to be studied in the future.

In considering the findings in emotional support, it should be noted that previous studies draw contradictory conclusions. For example, some studies find married people give less emotional support to their parents, especially married people with children [21][22]. In addition, Zhang, W.J. and Li, S.Z.[23] find that daughters do not show a gender advantage in emotional support, while sons become the main provider of emotional support; on the contrary, Zheng, D.D. et al. [24] claim women’s emotional support for their parents is slightly more than men’s. The findings from this study may offer a more comprehensive perspective in relation to emotional support. We find the married perform more patiently and positively in teaching their parents to use smartphones. In addition, women are more likely to give their parents emotional support to use smartphones. It implicates that in

the era of technology, the traditional “son-raising and anti-ageing” intergenerational support model is no longer universally applicable to Chinese families.

Overall, the findings provide strong evidence that the disadvantaged digital groups use mobile phones mainly for communication. In terms of education support, we discuss the skills which adult children intend to teach.

It is not surprising that adult children focus more specifically on teaching social media (such as WeChat) to satisfy the communication in daily life. However, adult children do not pay more attention to the skills to generate contents and to facilitate life. It implicates that parents might receive fewer public, social and financial benefits in digital life. Encouragement from family is a strong predictor for Internet use[25]. Perhaps it is meaningful to make adult children realize the importance of educational support to close the digital divide.

Wang, B. and Zhou, J.T.[26] also realize that intergenerational support also depends upon the living arrangement of a family. However, in this study, it is not a significant predictor in intergenerational support. Maybe the following reasons can illustrate it. Firstly, we do not take into consideration the living distance between adult children and their parents. We just divide living arrangement into two categories: co-residence and living without parents, which perhaps is weak in explanation. Secondly, the objective of this study is to explore the intergenerational support in narrowing the digital divide, which is different from some support in actual daily life.

6. LIMITATIONS AND FUTURE RESEARCH

Some limitations of this study need to be addressed. Firstly, the results are derived from a convenience sampling online. The size of sampling is small, and the participants are all Chinese, so the result cannot be generalized to the whole population. Secondly, the questionnaire mainly examines the relationship between demographic variables and intergenerational support. The relationship between intergenerational support and the use of smartphones by the middle-aged is not examined. Future researches can be conducted in depth. In addition, scholars can examine intergenerational support more carefully through age classification, to examine the difference in intergenerational support between grandparents and grandchildren, and between parents and children. Finally, due to the diversity of smartphone functions, educational strategies can also be studied in the future on the help of social education in bridging the digital divide.

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