Migrant parenting and mobile phone use: Building quality relationship between Chinese migrant workers and their "left-behind" children

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Abstract

This study examines the uses and gratifications derived from the mobile phones used by migrant parents to communicate with the children they leave behind. Data were gathered from a sample of 378 migrant workers who worked in factories in southern China. The results showed that migrant workers used their mobile phones to assist in distance parenting. They were motivated by the desire for instantaneous communication (i.e., immediate access and reassurance), online transactions, affection, mobility, relaxation, and information. The demographical results showed that the migrant workers tended to communicate with their older male children via calls and text messaging, whereas they tended to use audiovisual interaction to communicate with their female children. When migrant parents called, texted, or interacted with their children via audiovisual functions, they were motivated by the need for affection and relaxation. The study found that in predicting the perceived quality of their involvement, the significant motives of the migrant workers for using their mobile phones were the ability to parent the children they had left behind through instantaneous communication, the ability to show affection, and the ability to conduct online transactions. The theoretical and practical implications of the results of the study are discussed.

Keywords: migrant parenting, mobile phones, migrant workers, Parent-Child Relationship Inventory, uses and gratifications theory

Introduction

In recent years, there has been an influx of migrant workers into the first-tier cities of the Chinese Mainland and Hong Kong. The children that they have had to leave behind have attracted increasing public attention, but in-depth studies of the pattern of communication between these trans-regional parents and their children is still very limited. These “left-behind” children face the absence of stay-at-home parenting, which could lead to declining performance in school, communication disorders, and other psychological problems. Similarly, trans-regional parents face the challenge of providing family education in an effective and timely way as well as the potential risks of distance parenting. According to governmental figures, China’s floating population was more than 260 million by the end of 2012, which has made migrant workers an important social group (CNBS, 2012). The physical absence of migrant workers from their families creates a separation between the material benefits of urban employment and the maternal and/or paternal supervision of their children (Chib, 2014). Escobar (2010) defined the term “broken home” to describe transnational families that are disrupted because of economic duress and opportunity, which seems to apply to some migrant workers and their families in China. The results of a poll conducted in 1999 by the National Center for Fathering in the U.S. indicated that both fatherlessness and maternal absence could lead to significant social problems because fatherhood and motherhood are very important in shaping and maintaining profoundly meaningful connections and emotions between parents and children (Arendell, 2000).

In China, people have experienced a significant growth in the usage of mobile phones and networks, which are becoming the dominant medium of communication. Statistics from the Ministry of Industry and Information Technology (MIIT) showed that by 2013, China had more than 1.2 billion mobile phone users and the world's largest online

population with an estimated 800 million users (MIIT, 2013). Qiu (2014) noted that through mobile phones, migrant workers' voices can be widely disseminated, but the "worker generated content" is still overlooked, and the class differentiation in the migrant population needs to be taken into consideration.

Because of the rapid development of technology, the mobile phone is no longer a device used only for voice communication between two individuals. The mobile phone has become a hybrid device that integrates the communication of audio, video, and textual information. Indeed, previous studies showed that users nowadays are increasingly using their mobile phones for various purposes while multitasking, such as sending messages, taking pictures, downloading information, browsing the Internet, and checking social network sites. People often access these functions while they are on the move (Brenner, 2013). There is no doubt that mobile communication has become a valuable resource for strengthening the bonds among social networks (Ling, 2008).

In recent years, without the need for local involvement, the social ties established through mobile devices have become more flexible, breaking the boundaries of time and space (Castells, 2000). Mobile communication plays an important and unique role in this trend because the mobile phone facilitates connections with network ties regardless of time and space (Wellman, 2002). Madianou and Miller (2011) pointed out that mobile communication is one of the crucial ways of mitigating the problems of family separation. However, any assertion about the power of mobile phones for migrant groups to communicate with the children they left behind is still premature because the findings on how the phones are used, for what purposes, and at what cost are still unclear (Qiu, 2014). Therefore, the goals of this study are to investigate the role of mobile phones in influencing

the quality of parent-child relationships and the ways that migrant parents use the device for distance parenting.

Literature Review

Mobile Phone Usage

Among several contemporary mobile communication technologies, the mobile phone has been defined as one of the greatest domestic appliances ever invented (Coghill, 2001). Mobile phones present more options for interpersonal communication, and they have undoubtedly become the top wireless media carrier used throughout China even though traditional means of human communication are available (Li, 2009). Previous research proposed that the adoption of the mobile phone was no longer a status symbol (Blinkoff, 2001). Instead, the mobile phone is used to facilitate daily life, which will evolve into a mobile lifestyle.

Because mobile communication is similar to face-to-face communication, mobile communication can replace physical communication. Moreover, this ability is the main feature that distinguishes the mobile phone from other social media (Jin & Park, 2012). Chan (2013) noted that synchronous voice communication could substitute as another form of interpersonal communication when the interlocutors are in different physical locations. However, this assumption only applies to the situations where individuals with strong ties already know each other and speak regularly face-to-face. Indeed, mobile phone communication is used mainly to strengthen the bonds of existing relationships and social networks rather than building new ones (Jin & Park, 2012).

Li (2009) posited several reasons to explain why users like to use mobile phones, including convenience, mobility, safety, and networking. By using mobile phones, people are readily available to others, which potentially induces a sense of belonging and constancy

(Leung & Wei, 2000; Spagnolli & Gamberini, 2007). People like to use the mobile phone to communicate with their family members because with voice contact, they have a greater capacity to articulate personal emotions (Sawhney & Gomes, 2000). The information contained in and delivered by the mobile phone could induce high emotions in users, and people use the device to keep in touch more frequently than before the era of the mobile phone (Vincent, 2005).

It has been anticipated that this technical tool for communication is changing not only society's capacity to access information but also how society lives (Fortunati, 2002). Before the explosion of mobile phone usage, synchronous voice communication between parents and their left-behind children was uncommon and expensive. Richtel (2009) noted that with mobile phone people are available 24 hours a day seven days a week without geographical boundaries**.** To ensure continuous access to the mobile phone, many people keep their phone in a place that they can reach 24 hours a day. Li (2009) also emphasized that because of its portability and convenience, users can access their mobile phone at any time and in any place. In addition, the mobile phone has become a widely used communication tool for all age groups including older generations, who also have found that such communication devices are useful in emergencies and help them connect with their family and friends.

Text Messaging

Although mobile phones are playing an increasingly important role in people's daily lives, voice-to-voice conversations through these devices are taking place less frequently and communication through text messaging is becoming predominant (Richtel, 2009). This situation occurred in Japan several years ago in a significant change in people's

communication patterns from personal computer-based communication to mobile phone communication, especially text messaging (Ministry of Internal Affairs and Communications, Japan, 2007). Japanese adolescents prefer text-messages (including SMS and e-mails via mobile phones) to telephone conversations because texts are indirect, provide asynchronous communication, and are inexpensive (Igarashi, Takai, & Yoshida, 2005).

According to Madell and Muncer (2007), text messaging is used for several reasons, such as the ability to control how the user interacts with others and the length of the conversation. They pointed out that online communication and text messaging give the user added control over the message because users have the ability and the time to think about how to articulate what they want to say (Madell & Muncer, 2007). Igarashi, Motoyoshi, Takai, and Yoshida (2005) proposed three factors of text-message dependency: 1) excessive use of text messages; 2) the user's emotional reaction to text-messages; and 3) the relationship-maintenance function of text messages that can be used as substitutes for face-to-face communication. Another study identified that text messaging is often used as a social communication tool for building new relationships, bonding closely with families and friends, and reinforcing a sense of connection with peers (Kim, Park, & Rice, 2007).

Mobile Parenting

Social science research has long explored the relationships between specific parental control and its practical outcomes for children (Leung & Lee, 2012; Maccoby & Martin, 1983). Parenting styles concern the emotional sphere of the parent-child relationship and parental feelings about and attitudes toward the child (Grusec, 2002). According to Darling (1999, p.2), "Parenting is a complex activity that includes many specific behaviors that work individually and together to influence child outcomes." In parenting, parents need to control

their children by some means of involvement and strictness. Moreover, different amounts of involvement and strictness can lead to various results (Eastin, Greenberg, & Hofschire, 2006; Leung & Lee, 2012).

To track their children, many parents equip their children with mobile phones (Fresnoza-Flot, 2009). Kopomaa (2000) pointed out that parents bought children mobile phones in order to monitor and reassure their children no matter where they were or what they were doing. Mobile phones enable parents to keep their children safe (Leung & Wei, 2000). In addition, mobile phones enable parenting to be flexible because they loosen the duties of setting boundaries for children (Chena & Katzb, 2008). Fresnoza-Flot (2009) also found that the telephone was the preferred mean of transnational communication for migrant parents. All the migrants in his study had mobile phones, and their family members possessed mobile phones. The migrants also sent a monthly remittance to their children, which included the payment for mobile phone usage.

Ling (2004) found that mobile phones provided parents, children, and their friends with a direct and private communication channel. De Vries (2005) argued that even though mobile phones were originally created for professional or business purposes, they were used widely to maintain family connections and communication among friends. Ling (2004) found that the mobile phone allowed parents and children to stay connected during periods of spatial distance from each other. Fresnoza-Flot (2009) found that most of the topics discussed by parents and their children were family projects, education performance, well-being, and important events in the community and within the family circle. Geser (2005) noted that the mobile phone could not only help migrant users fill time gaps and deal with loneliness but also maintain family ties.

Uses and Gratifications

Uses and gratifications theory (U&G) is used to understand why and how people actively use specific media to satisfy their specific needs. U&G focuses on "what do people do with media," which is significantly different from other media-effect theories that focus on what media do to people (Katz, 1959). U&G theory discusses how users deliberately seek out media that will satisfy their specific social and psychological needs and allow them to enhance knowledge, social interactions, relaxation, diversion, and escape (Tankard, 2002). U&G theorists are mainly concerned about the ways in which individuals mold media content to gratify needs (Ball-Rokeach, 1998). Ruggiero (2000) observed that because people have an increasing number of choices for technology usage, motivation and satisfaction become crucial components of audience analysis.

To investigate the uses and gratifications of the mobile phone, Leung and Wei (2000) identified six primary motivations in the period when the mobile phone was beginning to become popular. The uses and gratifications included affection, entertainment, instrumentality, reassurance, fashion, and mobility. Chigona, Kamkwenda, and Manjoo (2008) noted that the gratifications of mobile phone usage were financial incentives, parental control, information access, immediacy, and so forth. Tamminen, Oulasvirta, Toiskallio, and Kankkainen (2004) identified three motivational needs for using mobile phones, including social needs, navigation needs, and mainly personal needs.

Keller (1997) distinguished two broad gratifications of telephone use: intrinsic and instrumental. The Intrinsic motivations for telephone use were using the phone to socialize, such as chatting, gossiping, contacting family, and having a sense of security; whereas the instrumental gratifications included specific concerns about the utility of the phone (Leung & Wei, 2000). Following this line of research, one aim of this study is to find distinctive

gratifications of mobile phone use particularly for migrant workers. Thus, the following research question is posed:

RQ_1: What gratifications do migrant workers seek in the use of their mobile phone for parenting?

Two further hypotheses are posited:

H1: The more migrant workers find use of mobile phone gratifying, the more they will use the mobile phone for distance parenting.

Parent-Child Relationship Inventory (PCRI)

A large body of literature examines the quality of family relationships in two primary global domains: positive relationship quality and negative relationship quality (Brendgen, Markiewicz, Doyle, & Bukowski, 2001). According to Gavin and Furman (1996), positive relationship quality refers to affection, intimacy, support and nurturance, whereas negative relationship quality refers to conflict, irritation, and antagonism in the relationship. Previous research used the global relationship qualities to examine parent-child relationships (Gavin & Furman, 1996).

Gerard (1994) proposed the Parent-Child Relationship Inventory (PCRI) to evaluate parental attitudes toward the effects of parenting on their children. The PCRI was used to assess the parents of children between 3 and 15 years of age (Gerard, 1994). Instead of replacing qualitative assessments of the parent-child relationship, the PCRI was used to conduct normative comparisons that placed qualitative impressions in perspective (Gerard, 1994). Moreover, PCRI was also useful in uncovering the latent factors in the problematic parenting of children from preschoolers to adolescents (Coffman, Guerin, & Gottfried, 2006).

The PCRI has seven content sub-scales. Each content sub-scale explores a specific aspect of the parent-child relationship (Gerard, 1994). They included (1) the parental support scale (SUP) is used to evaluate the level of emotional and social support that parents receive; (2) the satisfaction with parenting scale (SAT) is used to assess the pleasure and fulfillment got from being a parent; (3) the involvement scale (INV) is used to measure the extent to which parents interact with their children and their knowledge of their children; (4) the communication scale (COM) is used to assess how efficiently parents communicate with their children; (5) the limit setting scale (LIM) is used to measure parents' perceptions of disciplining their children; (6) the autonomy scale (AUT) is used to examine whether parents could help their children to be independent; and (7) and the role orientation scale (ROL) is used for the self-assessment of parental attitudes towards gender roles in parenting.

Higher scores in each sub-scale reflect better parent-child relationships, while lower scores indicate greater parenting hardship. A study carried out by Schroeder and Kelley (2010) with 100 parents of children ranging in age from 5 to 12 years revealed that the PCRI was valid with good internal consistency. Heinze and Grisso (1996) also found that PCRI was a promising measure because of good internal consistency and temporal stability. Hynan (2013) found that the PCRI showed no gender differences, which indicated that as a research instrument, its measure of gender equality is adequate. The PCRI was used in studies about children's behavioral problems and autism (Osborne & Reed, 2010). There were significantly different correspondences between the mothers and fathers' PCRI scores in the separate assessments of their children's perceptions of parent-child relationships (Coffman, Guerin, & Gottfried, 2006). In addition, parents with lower scores on the PCRI were more likely to punish their children severely and were more inclined to think it was

difficult to lay down the rules on their children's behavior (Heinze & Grisso, 1996). However, Otto and Edens (2003) found that the PCRI was limited because it lacked correspondence with criteria such as psychosocial or academic functioning.

However, only three dimensions, satisfaction with parenting (SAT), involvement (INV), and communication (COM), are used in this study because these sub-scales contain the items that are the most relevant in assessing different aspects of parental attitudes towards distance parenting. The sub-scales of limit setting (LIM), autonomy (AUT), parental support (SUP), and role orientation (ROL) were excluded because the original items designed to measure the parent-child relationship may be inappropriate or irrelevant to measure distance parenting. Therefore, this study focuses only on the satisfaction with parenting, involvement, and communication dimensions of the PCRI to investigate the quality of parent-child relationships of migrant workers who use their mobile phones to parent their left-behind children. Therefore, the following hypothesis is posited:

H2: The more migrant workers find use of mobile phone gratifying, the greater they perceive (a) they are satisfied with parenting at a distance, (b) they are involved with their left-behind children, and (c) they can communicate efficiently with their left-behind children.

H3: The more frequently that migrant workers use their mobile phone for distance parenting, the greater they perceive that (a) they are satisfied with parenting at a distance, (b) they are involved with their left-behind children, and (c) they can communicate efficiently with their left-behind children.

Based on the findings of literature review, the ultimate goal of this study is to determine how demographics, gratifications-sought, and the use of mobile phones for distance parenting collectively influence the PCRI. Thus, the second research question is

posed:

RQ2: How do migrant workers' demographics and gratifications-sought predict their patterns of mobile phone use for distance parenting?

RQ3: To what extent can demographics, gratifications-sought, and use of mobile phone for distance parenting predict the PCRI?

Methodology

Sample

The participants were 378 migrant workers from Shenzhen and Xiamen in China. They recruited from factories that employed a large number of migrant workers. As obtaining a probability sample of migrant workers was impossible because they are scattered over different economic zones in China, the data for this exploratory study were collected from the responses to paper-based survey using a convenience sampling method. The participants were asked to complete the survey only if they had children who were left behind, and they had to do parenting from a distance. Moreover, only migrant workers with children ranging from 3 to 17 years were targeted. Of the sample, 62.8% were female migrant workers; 53.0% of the participants were 31 to 40 years of age; 63.9% of the children reported being left behind were female. However, the children' age distribution was diverse: 25.3% were in the range of 3 to 5 years; 22.4% were in the range from 6 to 8 years; 16.6% were in the range from 9 to 11 years; 15.6% were in the range from 12 to 14 years; and 20.1% were in the range from 15 to 17 years. With regard to educational status, 20.3% of the participants had achieved middle school; 41.4% had a high school degree; and 29.8% had a bachelor's degree. Moreover, 35.1% of the participants reported that they had a monthly salary between US $552 and US $788, and 24.3% reported a salary between US

$788 and US $1,024.

Measures

Gratifications. This research adopted many motives or gratifications for the usage of mobile phones and conventional telephones that were used in previous studies (Aoki & Downes, 2003; Leung & Wei, 2000; Madianou & Miller, 2011; Vincent, 2005). In this study, the respondents were asked to respond to 24 items that measured how much they agree that each attribute of the mobile phone was important in their daily lives. A four-point Likert scale was used to rate the 24 gratification items with 1 = strongly disagree and 4 = strongly agree.

Mobile phone usage pattern. The respondents were asked to indicate their usage of mobile phones for distance parenting on a seven-point Likert scale (1 = never, 7 = almost always). Nine items were used to identify three dimensions of the pattern of mobile phone usage: calling, text messaging, and audiovisual interaction. Table 1 illustrates the means and standard deviations of these items. The first dimension was “calling” with only one item, which reflected the use of the mobile phone for making phone calls to children. The mean score of calling was very high at 5.71 (s.d. = 1.8), which suggests that making phone calls to children is very important for migrant workers in distance parenting. The second dimension, “text messaging,” was composed of three items that referred to the use of phone text messaging, WeChat text messaging, or QQ text messaging by migrant parents to communicate with their children. As Table 1 shows, the Cronbach’s alpha of this dimension was very high at .87. The third dimension, “audiovisual interaction,” contained five items that referred to the usage of the audiovisual functions of mobile phones to maintain and improve parent-child relationships quality between migrant workers and their left-behind

children. The Cronbach's alpha was high at .80, indicating high internal consistency among these items. However, the items had low mean scores, which suggests that migrant workers might rely on calling and text messaging to perform their parenting roles because they provide direct communication, while the audiovisual functions of mobile phones might only offer indirect or supplementary communication in distance parenting.

[Insert Table 1 about here]

PCRI. The original PCRI is a 78-item inventory with seven dimensions. It is used to assess parents' attitudes toward their children and the parent-child relationship (Gerard, 1994). In this study, some items were deleted to make the questionnaire with a better focus. Hence, each dimension consisted of 3 to 5 items. The parents responded to the statements using a four-point Likert scale in which 1 = strongly disagree, 2 = agree, 3 = disagree, and 4 = strongly agree. Lower scores indicated greater parenting difficulties.

Table 2 shows the means and standard deviations of the 10 items in three dimensions that were used to assess the migrant workers' attitudes toward the effects of their distance parenting and the parent-child relationship quality. The first sub-scale was "involvement," which was used to assess the extent to which the parents interacted with their children and their knowledge of their children. It consisted of 3 items; the reliability was marginal with Cronbach's alpha at .67. The second sub-scale, "communication," was composed of five items that referred to how efficiently the parents communicated with their children; the Cronbach's alpha was acceptable at .71. The last sub-scale was "satisfaction with parenting," which was used to assess the pleasure and fulfillment that the parents obtained from being a parent; the Cronbach's alpha was relatively high at .83. The mean scores for the items were also high, indicating that most migrant workers were satisfied with being parents.

[Insert Table 2 about here]

Demographics. The age, gender, education level, income level, children's age, and children's gender were recorded.

Results

Gratifications of Mobile Phone Use

To answer the first research question, a principal components factor analysis with varimax rotation was conducted to determine the potential groupings of the 24 gratification items in the mobile phone use of the migrant workers. As Table 3 shows, six factors with eigenvalues greater than 1.0 emerged, which explained 66% of the total variance. The first factor, "instantaneous communication" (or Immediate Access/Reassurance), marked the use of the mobile phone to ensure immediate access by users regardless of time and location. It also reflected that the mobile phone was used for security and safety in case of emergency. The internal consistency among the items underlying this factor was very high, as indicated by the Cronbach's alpha at .86, and the item means also had relatively high scores. These results may be because the mobile phone still plays a very important role in instantaneous communication, which was the initial purpose of the mobile phone invention. The second factor (α = .82), "online transaction," is a new gratification, which reflected the motivations for using the mobile phone to pay bills online, to do online banking, or to shop online. The third factor (α = .77), "affection," reflected the motivations for using the mobile phone to show affection. Items such as "being always available to the children" and "to feel closer to your family members" had the highest means on this factor followed by "to let others know you care for them" and "to allow parents to carry out family responsibilities while at work." "Mobility" was the fourth factor (α = .88). It reflected that the motivations for using the

mobile phone were to eliminate the need for change (coins), queuing up to use public phones, and to avoid the need to looking for a fixed public telephone. The low mean item scores suggest that the widespread use of mobile phones has made mobility no longer a strong motive. The fifth factor (α = .76), "relaxation," reflected that the mobile phone was used to relieve boredom, enjoy the pleasure of talking to people, gossip, or chat with friends or family. The last factor (α = .77) was "information-seeking," which marked the use of the mobile phone for keeping up-to-date with social events and checking traffic, stock prices, weather, and news updates.

[Insert Table 3 about here]

Hypotheses Testing

H1 posits that the more that migrant workers find the use of mobile phones gratifying, the more they use the mobile phone in distance parenting. The results of the bivariate analysis (Table 4) showed that calling, text messaging, and audiovisual interaction were significantly related to all six gratifications in the use of mobile phones in distance parenting (r ranged from .14 to .33, p <.01 and below). However, the results of the regression analyses (Table 5), after controlling for demographics, showed that calling was significantly predicted only by affection (β = .15, p <.05) and relaxation (β = .16, p <.01). Similarly, text messaging and audiovisual interaction were both significantly linked to online transactions (β = .21 and .30, p <.001, respectively), affection (β = .13, p <.05 and .17, p <.01, respectively) and relaxation (β = .18 and .18, p <.001, respectively). Thus, H1 was fully supported at the bivariate level and partially supported at the multivariate level.

[Insert Table 4 and 5 about here]

H2 posits that the more that migrant workers find the use of mobile phone gratifying, the greater they perceive that (a) they are satisfied with parenting at a distance,

(b) they are involved with their left-behind children, and (c)they can communicate efficiently with their left-behind children. As shown in Table 4, the correlations indicated that, with the exception of online transactions and satisfaction with parenting, all bivariate relationships were significant and positive (r ranged from .12 to .51, p <.05 or below). However, the results of the regression analysis (Table 6), after controlling for demographics, showed that satisfaction with parenting, involvement, and communication were significantly and positively predicted fully by only instantaneous communication and affection gratifications in using mobile phones in distance parenting. Other predictors only significantly predicted some dimensions of PCRI. Therefore, H2a, H2b, and H2c were strongly supported at the bivariate level and partially supported at the multivariate level.

[Insert Table 6 about here]

H3 hypothesized that the more frequently that migrant workers use their mobile phone for distance parenting, the greater they perceive that (a) they are satisfied with parenting at a distance, (b) they are involved with their left-behind children, and (c) they can communicate efficiently with their left-behind children. As shown in Table 4, the correlations indicate that calling was significantly related to satisfaction with parenting (r = .20, *p* <.001), communication (r = .13, *p* <.01), and involvement (r = .16, *p* <.01). Texting was significantly linked to communication (r = .18, *p* <.001) and satisfaction with parenting (r=.12, *p*<.05). Audiovisual interaction was related to communication (r = .14, *p* <.01) in the PCRI. However, as shown in Table 6, the hierarchical regression analyses revealed that, after controlling for demographics and gratifications, calling significantly predicted all three dimensions of PCRI (beta ranged from .15 to .18, *p* <.05), but text messaging and audiovisual interaction had no effect on PCRI. Therefore, H3a, H3b, and H3c were only partially supported.

Predicting Mobile Phone Usage Patterns in Distance Parenting

Three parallel regression analyses were conducted to assess the relative influences of demographics and gratifications sought on the patterns of migrant workers' mobile phone usage in distance parenting. Table 5 shows that migrant workers who often used calling via the mobile phone to perform their parenting roles from a distance tended to be younger parents (β = -.15, p <.05), less educated (β = -.13, p <.05), and had higher incomes (β = .17, p <.01). The results also showed that children's age also affected the patterns of migrant workers' mobile phone usage for distance parenting. The migrant workers called the older children (β = .20, p <.01) more frequently. Showing affection (β = .15, p <.05) and relaxation (β = .16, p <.01) were also significant predictors for migrant workers to use their mobile phones in carrying out distance parenting. The results also showed that the migrant workers who often used mobile phone text messaging for distance parenting tended to have higher incomes (β = .22, p <.001) and older children (β = .14, p <.05). The gratification variables, particularly online transactions (β = .21, p < .001), affection (β = .13, p < .05), and relaxation (β = .18, p < .01), were significant in predicting migrant workers' usage of mobile phone text messaging for distance parenting. With regard to the patterns of migrant workers' mobile phone audiovisual usage, the results showed that migrant workers with female children (β = .18, p <.05) were more likely to use the audiovisual functions of their mobile phones in distance parenting. The gratification variables online transaction (β = .30, p <.001), affection (β = .17, p <.01), and relaxation (β = .18, p <.01) were also significant predictors for the patterns of migrant workers' mobile phone audiovisual usage in distance parenting.

Predicting the PCRI

To examine the extent to which demographics, gratifications sought from mobile phone

usage, and patterns of mobile phone usage predicted PCRI, three parallel hierarchical regressions analyses were conducted. Table 6 shows that children's age (β = -.16, *p* <.05) and gender (β = .17, *p* .01) were significant predictors of the migrant workers' involvement in distance parenting. Moreover, the gratification variables immediate access and reassurance (β = .13, *p* <.05), online transaction (β = .12, *p* <.05), affection (β = .38, *p* <.001), and relaxation (β = -.12, *p* <.05) significantly predicted involvement in distance parenting by the migrant workers. With regard to the communication dimension of PCRI, migrant workers' age (β = .20, *p* <.01), children's age (β = -.16, *p* <.05), and children's gender (β = .13, *p* <.05) were all significant predictors. Moreover, the gratification variables immediate access and reassurance (β = .37, *p* <.001), affection (β = .31, *p* <.001), and information seeking (β = -.17, *p* <.01) were significant in predicting migrant workers' communication in distance parenting. In addition, the dimension satisfaction with parenting was significantly predicted by the three gratification variables immediate access and reassurance (β = .40, *p* <.001), online transactions (β = .11, *p* <.05), and affection (β = .45, *p* <.001). Among these mobile phone usage patterns for distance parenting, only calling by mobile phone significantly predicted migrant workers' satisfaction with parenting, involvement, and communication.

Discussion and Conclusion

The results of this study indicate that migrant workers' gratifications sought from mobile phone use in southern China were largely consistent with previous research, which include immediate access and reassurance, online transaction, affection, mobility, relaxation, and information seeking. It is interesting to note that items assessing the two gratifications, immediate access and reassurance, were combined in the process of the principal

components factor analysis. This is probably because these two gratifications were similar as both indicated that the motivation for mobile phone usage was instantaneous communication. It is also worth noting that the ability to make online transactions was a new gratification of the mobile phone usage by migrant workers, especially in their roles as parents far away from their children at home. With the development of mobile phone technology, it has become easier and safer for migrant workers to transfer money, view account balances, pay bills within China, and send money to their left-behind children or other family members with a Chinese bank account. Despite their low levels of education, migrant workers show high adoption rates in making online transactions through mobile phones.

Furthermore, the results showed that differences in the gratification dimensions and demographic characteristics of migrant workers were linked with distinct patterns of mobile phone usage. The gratifications of online transactions, affection, and relaxation were the strongest predictors of the migrant workers' usage of mobile phones in distance parenting. On one hand, because the migrant workers were separated from their left-behind children, they needed to find ways to send money to cover children's living expenses. Online transactions through mobile phones fulfilled this need because the devices are safer and easier to use than traditional channels of transferring money. In fact, online transaction was the only predictor that was significantly and positively linked to two specific mobile phone usage patterns, text messaging and audiovisual interaction. This suggests that migrant workers who are comfortable with texting and interacting with audiovisual apps in mobile phones are also those who are confident that doing online transactions are safe. On the other hand, showing affection played a big role in affecting the patterns of migrant workers' mobile phone usage in distance parenting. These results indicate that migrant workers

might largely rely on mobile phones to communicate with their left-behind children in order to maintain their quality parent-child relationships. Because affection was a significant predictor of the patterns of migrant workers' usage of the mobile phone, in calling, text messaging, and audiovisual interaction, which suggests that migrant workers show affection and love to their children through all these usage patterns. Moreover, relaxation was also a strong predictor of the patterns of migrant workers' mobile phone usage in distance parenting—especially for passing time, relieving boredom, chatting with friends, and so forth. This indicates that they spent much time on their mobile phones after work. This result also implies that they were more likely to contact their children when they sought relaxation after work. The results also showed links between demographics (especially the differences in children's age) and the patterns of migrant workers' mobile phone usage. The younger and less educated migrant workers were more likely to use the mobile phone calling function to communicate with their left-behind children. In addition, mobile phone usage by migrant workers with higher incomes and older children were more to make phone calls and send text messages to communicate with their children. Interestingly, the migrant workers had more interactions with their female children by using WeChat audio, QQ video, phone games, and so forth. The reason might be that female children of migrant workers are in general more dependent on their parents.

The results also showed that the demographic characteristics, gratifications sought, and different mobile phone usage patterns were linked with different dimensions of PCRI. Older migrant workers seemed to have better and quality communication with their left-behind children. The reason might be that older parents tend to raise children that are better in many aspects, such as social functioning and educational attainment. They are more willing to communicate with their children. The age and gender of the children were

also significant predictors of migrant workers' attitudes toward the effects of parenting. Migrant workers showed greater communication and involvement with their younger children and daughters. As mentioned before, girls are generally more reliant on their parents, and younger children also require more care, which could account for the findings in this study. The gratifications that migrant workers sought in mobile phone usage were associated with different PCRI variables. Instantaneous communication (i.e., immediate access and reassurance) and affection were the strongest predictors of PCRI. They were significantly and positively related to migrant workers' satisfaction with parenting, involvement, as well as their communication with their left-behind children. Because the migrant workers were separated with their children, it was especially important for them to stay in touch and ensure smooth communication with them. Showing affection and love to the children is a primal instinct of parents, the assumption of which is consistent with the findings of this study that affection was a significant predictor of PCRI. Online transaction, a new gratification sought in mobile phone usage, was significantly associated with the migrant workers' satisfaction with parenting and involvement in their children's lives. The reason might be that by making convenient and safe online transactions through their mobile phones, the migrant workers could easily buy various things for their children, send money to them, and pay for their children' phone bills. This capability would induce in the migrant workers the feeling that they were participating in their children's lives, and increase their satisfaction with being a parent. However, relaxation was a negative predictor of the migrant workers' involvement with their children. Information seeking was also negatively associated with the migrant workers' communication with their left-behind children. It is reasonable to assume that if the migrant workers frequently used the mobile phone to chat or gossip with their friends, or to seek information about weather, traffic

updates, or news, they may spend less time communicating with their children, which could be interpreted as the sign of a negative relationship quality.

Finally, as expected, the patterns of the migrant workers' mobile phone usage in distance parenting were also linked to PCRI. The usage of mobile phones to call children was significantly and positively related to the migrant workers' attitudes toward their perceived parent-child relationship quality. However, text messaging and audiovisual interactions with children showed no significant influence on PCRI. These results suggest that synchronous voice communication is more important for distance parenting because spoken words or the tone of voice might give more information to the participants. To be specific, the voice conveys various perceptions to the listener, and it gives a psychological dimension to the words being spoken. For example, seriousness, happiness, sadness, or anger can be evoked in the listener. The results of the study suggest that to build and maintain relationships with their left-behind children, migrant workers should conduct more voice communication with them through the use of mobile phones. Although audiovisual interaction may also be synchronous, phone game and sharing music (as included in the measure of this dimension) may not be as effective as simply making a voice call to facilitate better parent child relationship quality. Besides, getting wireless access to the internet for text messaging and audiovisual interaction may not be always easy in factories.

Implications

An increasing number of studies have explored Chinese migrant workers in the new digital era. In its contribution to the literature, this study probed migrant workers' distance parenting with their left-behind children. The mobile phone used to be regarded as a sign of conspicuous consumption, and for a long time, college students, white-collar workers, and

the middle and upper classes were targets for the sale of these devices. However, the findings of this study revealed that underclass workers with lower wages show increasingly higher rates for the use of mobile phones. Nevertheless, the attention paid to migrant workers by both market development and academic research has been far from sufficient.

It has been speculated that China's millions of rural workers could become a serious threat to social stability unless their problems of family instability can be solved. Because migrant workers from rural areas to cities toil long hours, they face the severe hardship that they rarely are able to take their children with them. Roberts (2014) found that 70% to 80% of migrant workers in China reported feelings of inadequacy, guilt, and anxiety about their absence from the children's lives, which had led to low production and even errors in their jobs. Because of geographical boundaries, the usage of mobile phones is extremely meaningful in improving migrant parents' involvement and communication with their left-behind children, as well as enhancing their satisfaction with parenting. Specifically, the call function of the mobile phone was the dominant approach used in distance parenting. However, even with the advent of inexpensive mobile phones and accessible Internet connections, the problem remains that the cost of long-distance calls is too expensive for migrant workers with relatively low incomes. Even though QQ, WeChat, and mobile phone apps are replacing mobile phone texting and calling, they both require access to a wireless network (Wi-Fi), which is not always available. Furthermore, it could be more difficult for left-behind children to access the free Internet because most of them live in rural areas.

With regard to uses and gratifications, the results of this study are consistent with previous findings that the gratifications sought in mobile phone usage by migrant parents fall into the categories of affection, mobility, relaxation, information-seeking, and instantaneous communication (immediate access/reassurance). However, the findings of

this study could be used to modify the uses and gratifications theory. The study revealed a new gratification sought in mobile phone usage: online transactions by which users can perform money transactions online, such as online shopping, paying bills online, making remittances online, and so forth. Migrant workers tend to send a large portion of their wages home in the form of remittances, and the mobile phone plays a major role in facilitating these transactions. This capability is particularly useful for migrant parents who send money home to their children in rural villages. Electronic transfers have lower interest rates and can save time because the user does not have to go to the bank in person. This finding could be used to extend the uses and gratifications theory, which future research then could use to examine other social groups.

Limitations and Suggestions for Future Research

First, this study was built on previous research in the West on PCRI and the uses and gratifications of mobile phone usage. Because the present study was conducted in Mainland China, the cultural differences between Western countries and China would probably lead to different results. Therefore, the findings in this study can be generalized only to the context in China. Second, this study focused on migrant workers employed at low-paid jobs in factories. Thus, future research could extend the sample to different classes of migrant workers. The present research did not study the perspective of children in considering distance parenting. Therefore, future research could investigate the perspectives of both the migrant workers and their left-behind children with the aim of determining how they view the effectiveness and shortcomings of distance parenting through the mobile phone. Finally, because the mobile phone is not the only device used in distance parenting, future research should consider other methods used to maintain the relationship quality of

migrant workers and the children they leave behind.

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Table 1. Mobile phone usage pattern for distance parenting

How often do you use the following mobile phone functions to help you do parenting from a distance?	Mean	SD	Alpha
Calling	5.71	1.8	--
Text Messaging	3.96	2.03	.87
Phone text messaging	4.04	2.21	
WeChat text messaging	4.21	2.35	
QQ text messaging	3.64	2.27	
Audiovisual interaction	3.68	2.03	.80
WeChat audio	3.92	2.31	
WeChat video	3.71	2.23	
QQ video	3.40	2.25	
Phone game	3.10	2.14	
Sharing music	4.02	2.16	

Scale used: 1 = never and 7 = almost always; N=378

Table 2. PCRI description

How much do you agree with the following statements?	Mean	SD	Alpha
Satisfaction with parenting	3.44	.61	.83
1. I get as much satisfaction from having children as other parents do.	3.36	.49	
2. I get a great deal of satisfaction from having children	3.53	.39	
Involvement	3.08	.70	.67
3. I spend a great deal of time with my child	2.95	.79	
4. I feel very close to my child	3.20	.81	
5. I feel there is a great distance between me and my child (Reverse coded)	3.02	.90	
Communication	3.02	.53	.71
6. My child generally tells me when something is bothering him or her	2.78	.94	
7. If I have to say no to my child, I try to explain why	3.31	.69	
8. I feel that I can talk to my child on his or her level	3.01	.75	
9. My child would say that I am a good listener	2.93	.80	
10. When my child has a problem, he or she usually comes to me	3.00	.76	

Scale used: 1 = strongly disagree, 2 = agree, 3 = disagree, and 4 = strongly agree; N=378

Table 3. Factor analysis of gratifications-sought in mobile phone use

As a migrant worker, I use the mobile phone…	Mean	SD	Factors					
			1	2	3	4	5	6
Instantaneous communication (Immediate Access/ Reassurance)								
1. to be always accessible to anyone no matter where you are	3.45	.67	.73					
2. to be available to the ill or aged members of the family	3.51	.59	.69					
3. to feel safe and secure in case of emergency	3.32	.69	.66					
4. to have a sense of security	2.93	.83	.66					
5. to provide immediate access to others	3.47	.69	.64					
6. to change your appointment in short notice	3.08	.83	.59					
7. to tell others you will be late during a traffic jam	3.26	.81	.50					
Online transaction								
8. to pay bills online	2.96	.93		.81				
9. to do online banking	2.94	.88		.68				
10. to do online shopping	2.81	.98		.63				
Affection								
11. to let others know you care for them	3.18	.71			.72			
12. to allow parents to carry out family responsibilities while at work	3.09	.77			.68			
13. to feel closer to your family members	3.25	.78			.64			
14. to being always available to the children	3.31	.71			.56			
Mobility								
15. to eliminate the need for change (coins)	2.87	.94				.86		
16. to eliminate the need to queue up for public phone	2.83	.99				.83		
17. to avoid the need of looking for a fixed public telephone any more	3.02	.95				.83		
Relaxation								
18. to relieve boredom by calling people	2.58	.92					.76	
19. to gossip or to chat	2.38	.94					.72	
20. to enjoy the pleasure of talking to people	2.88	.88					.63	
Information-seeking								
21. to see updates on stocks	2.14	1.07						.42
22. to keep up-to-date with social events	3.18	.79						.75
23. to check news headlines and weather updates	3.27	.73						.67
24. to see traffic updates	2.84	.97						.63
Eigenvalue			8.14	3.10	2.02	1.55	1.30	1.05
Variance explained (%)			31.31	11.92	7.78	5.97	4.99	4.03
Cronbach's alpha			.86	.82	.77	.88	.76	.77

Scale used: 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree; N=378

Table 4: Zero order correlation of all key variables

	2	3	4	5	6	7	8	9	10	11	12
1. Calling	.53***	.39***	.27***	.22***	.28***	.24***	.29***	.22***	.16**	.13**	.20***
2. Text messaging		.65***	.15**	.28***	.21***	.14**	.31***	.22***	.10	.18***	.12*
3. Audiovisual interaction			.14**	.33***	.18**	.16**	.32***	.18***	.07	.14**	.10
4. Instantaneous communication				.37***	.58***	.50***	.31***	.54***	.38***	.44***	.51***
5. Online transaction					.11*	.31***	.37***	.29***	.18***	.13*	.01
6. Affection						.31***	.38***	.53***	.44***	.44***	.57***
7. Mobility							.20***	.42***	.23***	.15**	.19***
8. Relaxation								.33***	.12*	.21***	.13*
9. Information-seeking									.29***	.19***	.28***
10. Involvement										.59***	.46***
11. Communication											.50***
12. Satisfaction with parenting											

Notes: *p<.05, **p<.01, ***p<.001; N=378

Table 5. Hierarchical regression of demographics, gratification sought on mobile phone usage patterns

Independent variable	Calling	Text messaging	Audio-visual interaction
Block 1: Demographics			
Age	-.15*	-.01	-.08
Gender (Female=1)	.04	-.07	.07
Education	-.13*	-.01	.11
Income	.17**	.22***	.10
Kid's age	.20**	.14*	.02
Kid's gender (Female=1)	.04	.08	.18*
$\triangle R^2$	.04	.07	.06
Block 2: Gratifications			
Instantaneous communication (Immediate access & reassurance)	.05	-.12	-.12
Online transaction	.10	.21***	.30***
Affection	.15*	.13*	.17**
Mobility	.11	.02	.05
Relaxation	.16**	.18**	.18**
Information-seeking	-.01	.09	.02
$\triangle R^2$	.13	.16	.16
R^2	.17	.23	.22
Adjusted R^2	.14	.20	.19
F	6.26***	8.81***	8.48***
n	378	378	378

*p<.05, **p<.01, ***p<.001; N=378

Table 6. Hierarchical regression of demographics, gratification sought and mobile phone usage patterns on PCRI

Predictors	Parent-Child Relationship Inventory (PCRI)		
	Satisfaction with parenting	Involvement	Communication
Block 1: Demographics			
Age	-.02	.05	.20**
Gender (Female=1)	-.02	-.08	-.00
Education	-.02	.03	.09
Income	.08	-.04	-.03
Kid age	-.05	-.16*	-.16*
Kid gender (Female=1)	.01	.17**	.13*
$\triangle R^2$	.01	.06	.05
Block 2: Gratifications			
Instantaneous communication (Immediate access & reassurance)	.40***	.13*	.37***
Online transaction	.11*	.12*	.01
Affection	.45***	.38***	.31***
Mobility	-.07	.03	-.08
Relaxation	-.08	-.12*	.05
Information-seeking	-.08	.01	-.17**
$\triangle R^2$	.43	.23	.29
Block 3: Mobile phone usage pattern			
Calling	.18*	.15*	.15*
Text Messaging	-.02	-.03	.12
Audiovisual interaction	.06	.07	.06
$\triangle R^2$	.01	.01	.01
R^2	.45	.30	.35
Adjusted R^2	.42	.27	.32
F	19.25***	10.42***	13.02***
n	378	378	378

*p<.05, **p<.01, ***p<.001; N=378