

Information and Communication Technologies Influence on Family Relationship

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Abstract

Background: Information and Communication Technologies (ICTs) have affected various dimensions of modern societies, modifying even economic, politic, social and cultural structures. Therefore, it cannot be ignored the positive impacts according to social knowledge appropriation, but even in proper dimensions of social and family relationship, where ICTs usage has been compared with narcotic additions.

Objective: Explore how the use of ICTs have impacted the family interaction in Medellin city, 2016.

Methodology: The study was carried out through an exploratory qualitative and a convenience sampling research. A self-administered instrument supported by a Likert scale was used, applied to a group of residents of Medellin city.

Results: It is observed that although ICTs have enabled a large flow of information that reinforces the nuclear family, particularly children, also have caused a detriment in communication processes and family life, generating sensations that lead to family members perceive a “distant relationship”, which goes against the current family concept.

Conclusion: It is pertinent to encourage further researches to evaluate the impact of ICTs on the relationship processes from a qualitative vision and through longitudinal studies, and explore how new technologies have redefined the concepts of family life in modern societies.

Keywords: communication, family, information, qualitative research, technology.

1. Introduction

In recent years, it has been popularized the idea of immersion of modern societies in a phenomenon of revolution that involves social, economic and cultural structures as a result of Information and Communication Technologies –ICT (Sánchez, González, & Sánchez, 2012).

The gradual and generalized access to internet that has been experimented by present day societies has encouraged the development of a new space that sets out countless operations, going from information exchange to business transactions (Cano & Maestre, 2015). This situation has generated a significant change on the lives of people, transforming the communicational ways, the labor market relations and the mechanism of negotiation for organizations (Sánchez et al., 2012).

In this framework is important to consider that the emergence of the information society is given by the convergence of three independent phenomena ending in the seventies: the first of them, is constituted by economic crisis and the weakening of the workforce productivity as a result of labor conflicts; the second one, emerges as a result of the growth of cultural and social movements such as the defense of the human rights, protection of the environment and greater women empowerment; the third revolution has taken place thanks to the information technologies, an event that involves the redefinition of the power relationships and the interaction self-dynamics in which societies are based on (Castells & Martínez, 2006; Bergonzelli & Colombo, 2006).

In accordance with the set out above, most individuals intend to remain at the forefront of the advances generated around the ICT (Bonder, 2008), and families are not an exception, as they are the most important institution of a person, and are also the basis of future societies; a figure that will have to adapt to new environmental changes in order to continue fulfilling their role in the present communities framework, This situation leads to the recognition of positive changes that technologies can cause in nuclear family (Leung, 2011, Carvalho, Francisco, & Relvas, 2015).

Therefore, consequently with the constant dynamic of the current societies, the concepts of family and technological changes are realities increasingly interrelated (Verza & Wagner, 2010). Even the classical figure of family is now a support role between their members; the new technologies have redefined the communication processes and the access to information by their members, modifying even the ways in which family life activities are performed (Lasen, 2010).

In this context, it should be acknowledged that the revolutionary phenomenon hidden in the growth of information technologies could be defined by its positive or negative impact depending on the way in which ICT are used. From this principle, the significance of creating awareness of their usage is considered as a facilitator of the communication processes and does not permit the bad use of them (Mendoza & Chávez, 2010).

Following this reasoning, for the causes that originated this research is relevant to consider the factors that have an influence in acquisition and use of ICT, in the case of families is determined by the gender and the socio-economic situation of parents. However, the role of children must be considered as well, since parents are conscious of their responsibility in formation processes of nuclear family as a basis of the same society. They ensure to anticipate to the effects that ICTs have when are adopted by the dynamics of each nuclear family (Godoy & Gálvez, 2011). In this sense, families could be classified in three dimensions according to their propensity for the use of media: traditional (low use), intermediate (average use), and multimedia (high use) (Rompaey, Roe, & Struys, 2002).

The children in traditional and intermediate families are involve in tools like internet by the access from their institutional educations (Marciales & Cabra, 2011), with the difference that children of intermediate families can navigate on their own computers at their proper houses, as their families express their interest on having this tool as an in-home supply for the development of academic activities and as an entertainment mechanism; while those in traditional families can only do it in a low frequency (Rompaey et al., 2002).

In this sense, the in-home ICT equipment takes place in cases where many families have computers, television, internet connection, mobile phones, Mp3 and Mp4 devices, video console, etc. This situation shows a relevant perception by parents in the incorporations of these tools as a motor of socialization and they motivate the acquisition of these (Buxarrais, Noguera, Tey, & Duprat, 2011).

It is important to note that according to studies when it comes to a purchasing decision for the acquisition of ICT devices, men are the most involved, as they are the ones who invest more in this concept. Before exposed, the gender differences are stood out in the usage of information and communication technologies and feel pleased by typology applications (Sánchez, 2010).

According to a sociological study carried out in the city of Barcelona, when these elements are taken into account, and linked to the exposed earlier, it is important to point the repercussions and problems derived from the use of CTs, identifying that the technologies most used by children are television, internet and computers, where internet and computers top the three of them, but television is the media that family interacts with most of the time (Buxarrais et al., 2011). These situation is replaced by (Mendoza & Chávez, 2010), who in their research exposed that only 23% of respondents watch their favorite TV program with their family, this without distinguishing if they live or not with both parents. That is to say, regardless of the family conformation; television is not a significant family union factor.

Therefore, denotes the importance of parents regarding to the experiences that their children would have with the informatic tools (Muñetón, Suárez, & Rodrigo, 2015). These have been criticized, as they can bring on negative effects on families, promoting the deterioration of social relationships. However, with the progressive adoption that ICT have been implemented in nuclear family, it is possible to note their benefits when used (Pablo, Mañas, & Cuadrado, 2006).

It is important to take into account that those parents beyond the age of 50, have less possibilities to adapt their lifestyle to new technologies, the environment of their child is more complex to understand, with less opportunities of conversation and neutralization tools for the negative effects of the new "technological culture", in which the current society is immersed (Diazgranados, 2007; Rueda, 2009; Correa, 2011). Under this premise, Hohfeld, Ritzhaupt, and Barron (2010) said that schools played a fundamental role, since not only guaranteed access to ICT,

but can also promoted awareness and training of family members in the necessary skills to manage them. For this reason, if there are well various dilemmas surrounding the use of these technologies, it cannot be ignored the leading role that have had on the social appropriation of knowledge and growth of communities (Diazgranados, 2007).

As for the spent time in the use of ICT, it tends to modify certain parameters of social and family behavior (Carbonell, Chamarro, Griffiths, Oberst, Cladellas, & Talarn, 2012; Carbonell et al, 2012). According to studies performed by the Center for the Digital Future at the University of Southern California, the percentage of people who spent less time with their families since the internet came home increased from 11% to 28% from 2006 to 2008. Consequently, the average number of spent hours declined to share with family go about 26 hours per month to 18 hours per month. Mauritzson & Nordmark (2004) supported this fact by stating that the decrease in family time coincided with the growth of social networks; while social circles and friends do not shrink, trends that are replicated in most populations. In addition, Mauritzson and Nordmark (2004), and Alavi, Maracy, Jannatifard, and Eslami, (2011) support that the increased use of internet has been associated with increased symptoms of depression and solitude.

Hence new parents must face a series of new risks associated with the processes of socialization of their children (such as bullying, identity theft, invasion of privacy, sexual abuse, etc.), given by their role as key agents in the construction of autonomy of new citizens (Gardner & Davis, 2013), a situation that has led to a dichotomy from the positions of parents and children; first of these consider the use of ICT should be more restrictive to ensure protection against the risks associated with their use, while for children, the access to new technologies should not be sacrificed, since is their current stage of socialization. In this same sense, it must be considered how the use of technological devices (particularly computers with network access) without adult supervision at home, can be a negative effect on school performance of children (González et al., 2015)

Therefore, to avoid improper use of ICT and abuse thereof, factors such as strengthening ties within family members are also required to enabling an adequate family live (Mendoza & Chávez, 2010). However, not all impacts should be perceived as negative, some authors also point out the strengths of the processes associated with new technologies, as asserted by Pablo et al. (2006) who argues how ICT have enabled families to take place in an more integrated and transparent environment from the information point of view, increasing their choice and negotiation.

Thus, within the framework of opinions, although some authors suggest that the use of various information technologies increases the likelihood of promoting contact face to face; there is a widespread perception in which ICT do not favor family communication (Aguilar & Leiva, 2012). In turn, it cannot be ignored the consolidation of an information and knowledge society movement by all technological development (Marciales & Cabra, 2011).

The biggest challenge is to resolve the gaps between the adult and young population's appropriation process of new technologies (Gómez & Phillippi, 2014). The young are accustomed to manipulate ICT in a faster way, making them the pioneers of their use and teaching. However, adult population is responsible for assisting the formation of the new generations; they cannot be careless in this situation. On the other hand, it should motivate learning of all the technological tools to stimulate a link to the new social dynamics (Watt & White, 1999; Lindsay, Smith, & Bellaby, 2007).

In this context, it is also important to mention the trends and preferences on information technology, and so Mauritzson and Nordmark (2004) exposes that the main interest of families is to incorporate these technologies without it becoming tortuous. They seek for simple handling, so time and resources invested are minimized. A clear example is the electronic payments that have taken more strength, bringing families to new consumer experiences (Pablo et al, 2006).

From then, the versatility of this technologies, has promoted the ease of communication for individuals with disabilities, same as for those individuals with speech or hearing impairments (Cabero, Fernández, & Córdoba 2016), this circumstances promote the social inclusion and the breaking of barriers to access communication and socialization of a group of people. Likewise, the use of mobile phones and instant messaging are excellent allies to stimulate interaction processes in different contexts (Capitão, Pisco, & Marques, 2012).

Bonded with this situation, have emerge new tendencies associated to the use of ICT, as telework, an opportunity in which new technologies afford to work from home (Golden, 2012), beneficiating those in particular conditions that require a work connection or employability, as is the case of parents with small children and even population with disabilities (Shin, El Sawy, Liu, & Higa, 2000). These conditions have configured new ways of working, because now is possible to execute a job from home in an easy way, on account of the diversity of electronic

devices and connectivity dimensions according to Leung (2011).

2. Methodology

The present study is a qualitative exploratory field research performed using a self-administered questionnaire distributed by virtual means. The purpose of the surveys was to obtain a more accurate approximation to people's opinion about the use of Information and Communication Technology - ICT- and its influence on families and thus become more familiar with the subject, to subsequently carry out research on a particular context.

2.1 Sample

A convenience sampling with 77 people was carried out, which it was taken into account three age ranges, who met three established criteria by the authors: 1. reside in the city of Medellin, Colombia, 2. live with his family and 3. Have some technology in their homes, such as computer or Smartphone.

The surveyed residents of the city, 63.9% are women and 36.1% men, distributed by defined age groups according to the World Health Organization (WHO) as follows: 32.5% are teenagers (12-20 years old), 62.7% are young adults (21 -35 years old), and 4.8% are mature adults (36-60 years old). It must clear that adults over 60 years old and children under 12 years old were not taken into account.

Moreover, 20.5% of respondents did not live with their family and 79.5% does, the latter 25.8% is classified as small families (1-3-members), 71, 2% medium size families (4-6 members) and 3.0% are big families (7 or more members). In turn, families are composed of 16.4% by age 18, 38.5% of members between 18 and 28 years and 45.1% of people over 28 years old.

2.2 Data Collection

Data were collected through a survey questionnaire type with open questions, which was administered virtually about 3 months (from March to May 2016) by social networks using Google forms, searching low cost, convenience, speed and ease of creation. This questionnaire was designed by the authors of the paper based on previous literature review.

The first section of the questionnaire consists of the characterization of the population which is directed the survey, for which we ask for age, gender, if they live with family, number of family members living with the respondent and finally the age of the members that make up the family in a range of ages is distributed (less than 18 years between 18 and 28 and greater than 28 years). The following section is qualitative with open questions (Table 1) and aims to know the perception of people about the influence of ICT in family life. Participants were chosen from a non-probability sampling criterion. The inclusion criteria of the survey are to be residents of the city of Medellin, Colombia.

Table 1. Samples of some survey questions

1.	Does your family spend money on the purchase of new technologies? If your answer is yes, for what purpose do you spend it?
2.	How have you made use of ICT inside the home?
3.	How have you benefited from the use of ICT?
4.	Mention disadvantages found in the use of ICT inside your families.

2.3 Data Analysis

The data analysis was conducted by the researchers, following these steps:

- Consolidation of the results obtained from the surveys.
- The performance of an analysis for each question.
- Identification of the patterns and significant answers for the objective of the investigation
- Description of the data and the obtained answers.
- Resolve the detected information and its contribution to the investigation.

2.4 Rigor

The rigor with which the research was conducted is mainly attributed to the literature review and data analysis. The state of the art was founded on reliable information, preferably indexed database articles and as for the data

analysis, additional consultations were conducted with various external researchers to this research for review.

2.5 Ethical Considerations

At the beginning of the questionnaire an informed consent exposing the purpose of the study, the confidentiality of the data provided and the duration of the survey was presented to the participants so they could decide whether they wanted or not to continue with the questionnaire. For the implementation of the study we had the ethical endorsement of Escolme Research Center.

3. Findings

It is related as a first relevant category in the qualitative analysis of information *the benefits of the use of ICT in families*, for the reader understanding is presented the next figure:

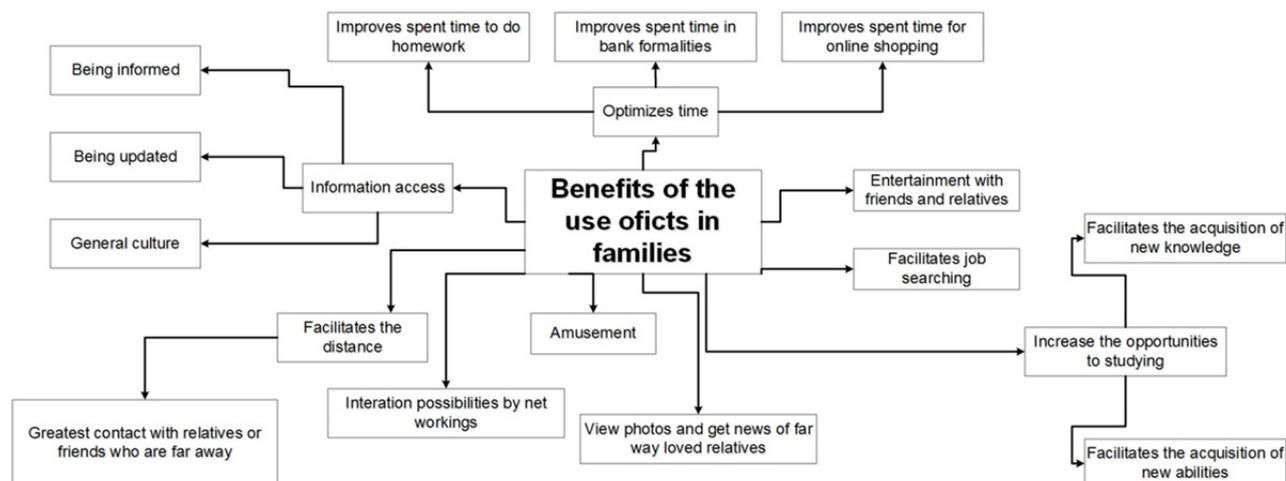


Figure 1. Category 1: Benefits of the use of ICT in families

Majority of participants, coincide that the most given benefit by the use of ICT is the facilitation of distance communication, either with relatives or friends who are far away and the distance there is an impediment to physical contact, but through various means (e.g. video calls) may have an approach and a dialogue with these people. In addition, the use of emerging technologies can view photos and get news of loved ones through social networks in real time. About that, one of the interlocutors of the study discusses:

“On points of work, my brothers and father have to traveling, and this help us to have communication, share photos of experiences when we are not together, know the people with are relating the other members of family” (Participant 63)

Before exposed, coincide with the reviewed theory, since ICT have change the conventional communications, because these have facilitated the ways of access of interpretations of people in any place and moment (calls, message, video call, and more), which make that individuals can be more connected than ever (Leung, 2011).

Other advantage by participants is that ICT promote the amusement and entertainment with friends and family members, considering that it is more ease watching movies, searching recipes, making karaoke through media as YouTube and others. In this way, in many occasions it can use information technologies as way to create spaces that promote the interaction with close people, so contributing to encourage networking.

Other aspect to taking into account is that people consider that ICT have helped to optimize their time, because there is no need to commute or do various activities like bank formalities, shopping, since all these can carry out online. In literature, Martí, Mañas and Cuadrado (2006) confirm the before exposed, since they express that new technologies promote to families managing more efficiently their resources, economizing time, money and other uses and activities of home; a clear example are the online payments to shopping goods and services, who are more established in families than ever, and even some technologies have brought families to new beneficial experiences as the free consume or the acquisition of low cost goods.

On the other hand, the use of new information technologies has enabled people greater access to information, enabling them to be informed, updated in more general topics related to culture. This is further corroborated with the information found in the literature, where most of people say that speed to get information (69.2%), followed

by 24-hour availability (66.9%) and the amount and variety of information (55.8%) are the most that they like in the network (Irirarte, 2007).

Also, is noteworthy how the student participants suggest that these tools have increased opportunities to study, making it possible to acquire new skills and knowledge, for example through tutorials. Furthermore, ICT has assumed a major role in virtual education, which has facilitated the teaching and has given people an alternative to interact with academic communities in other regions of the world. In the framework of the analyzed information, a second relevant category, related to *disadvantages of the use of ICT in families*, which is summarized in the following figure:

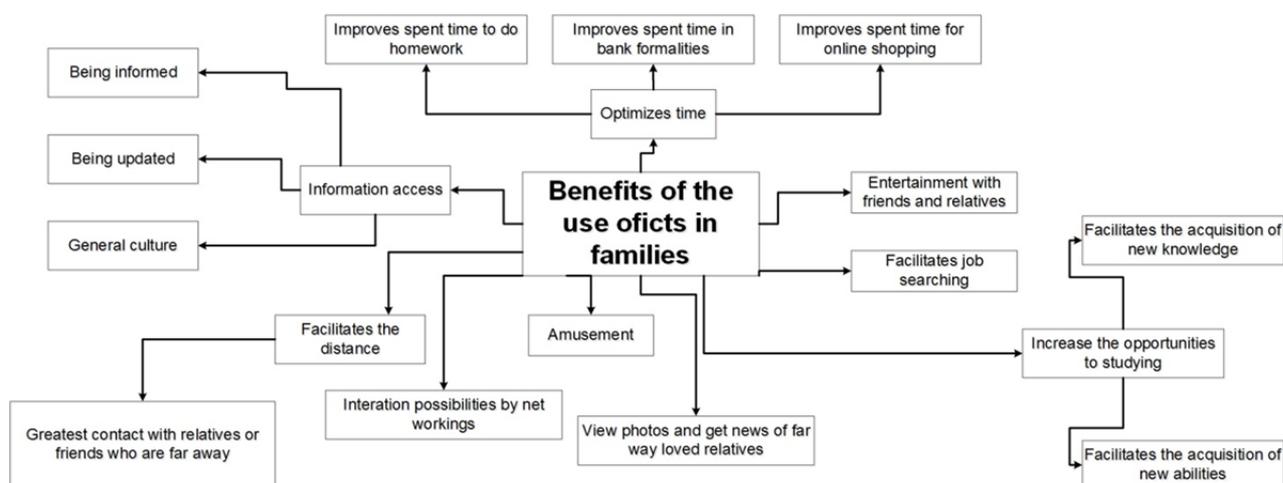


Figure 2. Category 2: Disadvantages of the use of ICT in families

The above analysis is based on information provided by participants when asked about the disadvantages found in the use of ICT in their families, as well as how these technologies have affected the relationship and family life.

From the Figure 2, the multiple negative effects that the inappropriate use of ICT can bring are identified. Most of respondents of the study affirmed that in many occasions, the excessive use of these technologies made each member of their family isolate in "his/her own world". This reflects researched precedents in this issue which claim families are now in a context with a greater individualization that in their origins the considerable reduction of quality spaces to be with family, something that implies a significant diminution of talk and finally detriment of nuclear family. Likewise, participants coincide in that the use of these technologies causes addiction and dependency of the individual to the use of certain devices. About that, one of the collaborators of the study says:

"People now a day are not controlled by themselves; actually technologies are who control people lives". "Being exposed to technologies in an excessive way, debilitates the spiritual and emotional equilibrium, modifies the behaviors and creates aggressive behaviors, it can disappear the physical contact and the interchange of verbal communication, and exposes to dangers given by the non-appropriated use of information" (Participant 17)

Thus, when family members have a constant dependency on virtual communication, they forget physical interaction, which is detrimental for the nuclear family. This aspect makes that many families feel a lack of affection, so they do not perceive the love of other members.

According to the bibliographic searching carried out in this research, the mentioned behaviors make the ICT become mediators, since they modify the rules and manners of doing diverse quotidian activities (Lasen, 2010), adopting ways that are detrimental to the adequate family relations.

In the same vein, constant virtual communication can cause misunderstanding, since information might not be as clear and specific as it is in verbal interchange. Therefore, various participants indicated that this behavior could generate the destruction of the networking, due to a great part of information being subjective, causing possible conflicts. On the other hand, problems can arise when family members have virtual communications with unwelcome people of the nuclear family.

Facing this, it is determined how people can experiment addiction and dependency to the ICT, that, becoming a great disadvantage. Many people are more focused on current technologies of virtual world, most of time they desire to know what is happening in their technological environment, and they do not put interest to their family

members. Theoretical studies before exposed, note that the diminution of shared time in family coincides with the growth of social networks.

4. Discussion

The results of this study are consistent with several investigations carried around information and communications technology -ICT-, which have shown the importance of these in the cultural context and its impact on the social level; as asserted by Graells (2013), Moreno & Delgado (2013) and Yáñez, Okada, & Palau (2015), influencing the mechanisms of social and interpersonal communication.

In this sense, one of the main benefits that has been associated with ICT is related to its impact on social and human development, generating more inclusive societies, with focal points in environmental, educational and management of health services matters, as stated by Sunkel and Trucco, (2010), a situation that also as posed by (CEPAL, 2010) has led to a revolutionary phenomenon in public policy for regions of low and middle income, as it is the case of Latin America.

One of the fields where further evidence in relation to the benefits of ICT is expressed stands in the educational field, where the Latin American region according to Claro (2010) incorporation would ensure first that educational institutions prepare students for management of such technologies as second educational organizations will guarantee the reduction of the digital divide, enabling universal access; and thirdly, to promote growth in school performance.

The above approach is related to the findings of this research, where participants expressed that the acquisition of information and communications technologies provides access to a wealth of information, which enables family members be updated and somehow improve their knowledge of other cultures, as expressed by Díaz, Pérez and Florido (2011) and Priegue and Leiva (2012) in their studies.

Similarly, among the benefits associated with ICT, in his investigation Christensen (2009) points out how the use of text messages have served as a digital channel that stimulates ties of closeness between household members when they are separated, which it adheres to the results presented in this study, where participants also manifested to observe in information technology means that facilitate remote communication.

With relevance to the disadvantages generated by the incorporation of ICT in terms of family relationships, in their research Figuer Malo and Bertran (2010) through the analysis of two cohorts-one in 2003 and another in 2008 illustrate the parent's attempt to stay updated and maintain proper communication with their children, through topics that are of interest to the adolescent population - in this sense, content related to information and communications technology - showing clearly that the level of satisfaction when it comes to communication patterns between parents and children are lower in the last cohort, and expressing the impact exercised over the time of these technologies in family life. This argument validates the research findings where some of the participants expressed that the new information and communications technology, propitiated a decrease in family dialogue.

Likewise, Ayuso (2015) states in their study how internet represents a revolutionary source of access to information to the children, where parents have gradually lost power to socialize with them and also face a great challenge where the family values inculcated inside the household might be affected -in case teenagers access to various information contradicting the system of value education instilled at home. This statement of the author corroborates testimony of the participants in this study who express relationship with high dependency to new technologies and how this distances members of the family.

Finally, it is pertinent to note that although the study results are consistent with other studies in the literature review there is another factor that deserves detailed examination in other researches, with an either quantitative or qualitative approach, and has to do with one of the guesswork out of the study by Hernández, Vicent and Esteban (2014), who point out that beyond parental training in skills for managing digital tools it is required to abolish the myths erected around the use of ICT by adolescents, as these deteriorate the relationship between parents and children.

Hence its study represents a challenge to the academic community, as normally existing investigations concern about the disadvantages generated by technologies in the social and interpersonal relationships, but little research has focused on the impact of myths and existing social meanings around the subject in the affective and family life that deserves a more comprehensive treatment.

5. Conclusion

In extreme cases, the non-appropriated use of ICT produces a drastic estrangement and solitude of family members,

a situation that is articulated with the arisen theoretical referents above, where it is indicate how the non-adequate use of internet can be associated with a growth of solitude and depression symptoms. Even so, there are advantages and benefits for the use of these technologies into families, it is necessary to control their adequate use in order to avoid causing adverse effects that damage the families' relationship.

A small portion of the studied population indicates in their answers that whether ICT themselves are good or bad, depends on the usage you give them, rules and time spent on the family agreement behavior. Also, it is determinate by new technologies parents' familiarization level, control, supervision, conscience about the appropriate use of current and emerging ICT.

Thus, according to the exposed results and the respondent's answers. It can be inferred that the leading role exercised by the information and communications technologies in society and the way they are revolutionizing the human interaction can not be ignored; a situation which has not been outside of the family.

However, the need to create a culture within nuclear family, where this is defined as the central nucleus formation of citizens and through which it is possible to continue optimizing the benefits that these technologies provide, with the empowerment of individuals and ensuring access to information in real time, but without neglecting the importance of the formation of personality and the relationship with others, inviting them to leave virtual scenarios to share different spaces where true coexistence is guaranteed, that no matter how much time passes and how many new technologies emerge, these never go out of style.

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Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

References

- Aguilar, C., & Leiva, J. (2012). La participación de las familias en las escuelas tic: análisis y reflexiones educativas. *Pixel-Bit, Revista de Medios y Educación*, (40), 7-19. Retrieved from <http://www.redalyc.org/articulo.oa?id=36823229001>
- Bergonzelli, P., & Colombo, S. (2006). La sociedad de la información y el conocimiento: Implicancias para América Latina. *Contribuciones a la Economía*. Retrieved from <http://www.eumed.net/ce/2006/pbsc.htm>
- Bonder, G. (2008). Juventud, género & TIC: imaginarios en la construcción de la sociedad de la información en América Latina. *Arbor*, 184(733), 917-934. <https://doi.org/10.3989/arbor.2008.i733.234>
- Buxarrais, M. R., Noguera, E., Tey, A., & Duprat, F. (2011). *La influencia de las TIC en la vida cotidiana de las familias y los valores de los adolescentes. Observatorio de la Educación Digital* (OED). Retrieved from http://oed.ub.edu/PDF/OED_informe_TIC_familias_cast.pdf
- Cabero, J., Fernández, J. M., & Córdoba, M. (2016). Conocimiento de las TIC aplicadas a las personas con discapacidades. Construcción de un instrumento de diagnóstico. *Magis*, 8(17), 157-176. <https://doi.org/10.11144/Javeriana.m8-17.ctap>
- Cano, G., & Maestre, J. M. (2015). Tecnología y sociedad: ¿Por qué no llega el hogar digital?. *Informes de la Construcción*, 67(538), 1-9. <https://doi.org/10.3989/ic.13.154>
- Capitão, S., Pisco, A., & Marques, R. (2012). Connecting families and schools of students with deafness: describing the ICT and internet use in education. *Procedia Computer Science*, 14, 163-172. <https://doi.org/10.1016/j.procs.2012.10.019>
- Carbonell, X., Chamarro, A., Griffiths, M., Oberst, U., Cladellas, R., & Talam, A. (2012). Problematic Internet and cell phone use in Spanish teenagers and young students. *Anales de Psicología/Annals of Psychology*, 28(3), 789-796. <https://doi.org/10.6018/analesps.28.3.156061>
- Carvalho, J., Francisco, R., & Relvas, A. P. (2015). Family functioning and information and communication technologies: How do they relate? A literature review. *Computers in Human Behavior*, 45, 99-108. <https://doi.org/10.1016/j.chb.2014.11.037>
- Castells, M., & Martínez, C. (2006). *La era de la información: economía, sociedad y cultura*. México D.F: Siglo XXI. Editores.
- CEPAL. (2010). *Políticas públicas de Sociedad de la Información en América Latina: ¿ una misma visión?*

- Pensamiento Iberoamericano*, *LC/W.314*, 26. Retrieved from <http://eclacpos.org/ddpe/publicaciones/xml/1/39181/W314Esp.pdf>
- Christensen, T. (2009). "Connected presence" in distributed family life. *New Media Society*, *11*(3), 433-451. <https://doi.org/10.1177/1461444808101620>
- Claro, M. (2010). *Impacto de las TIC en los aprendizajes de los estudiantes: estado del arte. Documentos de Proyectos, Estudios e Investigaciones Cepal*. Retrieved from <http://repositorio.cepal.org/handle/11362/3781>
- Correa, M. del C. (2011). *Las representaciones sociales de las TIC en los adultos. I Congreso Uruguayo de Sociología*, 22. Retrieved from <http://www.observatic.edu.uy/wp-content/uploads/2011/08/PONENCIA.pdf>
- Díaz, J., Pérez, A., & Florido, R. (2011). Impacto de las tecnologías de la información y las comunicaciones (TIC) para disminuir la brecha digital en la sociedad actual. *Cultivos Tropicales*, *32*(1), 81-90. Retrieved from http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0258-59362011000100009
- Diazgranados, F.. (2007). Los ni-os y las familias frente a las Tecnologías de la Información y las Comunicaciones (tics). *Psicología desde el Caribe*, (20), 208-224. Retrieved from <http://www.redalyc.org/articulo.oa?id=21302010>
- Figuer, C., Malo, S., & Bertran, I. (2010). Cambios en las relaciones y satisfacciones intergeneracionales asociados al uso de las TICs. *Psychosocial Intervention*, *19*(1), 27-39. <https://doi.org/10.5093/in2010v19n1a5>
- Gardner, H., & Davis, K. (2013). *The app generation: How today's youth navigate identity, intimacy, and imagination in a digital world*. Yale University Press. <https://www.amazon.com/App-Generation-Navigate-Identity-Imagination/dp/0300209347>
- Godoy, S., & Gálvez, M. (2011). La brecha digital correspondiente: obstáculos y facilitadores del uso de TIC en padres de clase media y media baja en Chile. *Revista Iberoamericana de Ciencia, Tecnología y Sociedad-CTS*, *6*(18), 199-219. Retrieved from <http://www.revistacts.net/volumen-6-numero-18/103-dossier/407-la-brecha-digital-correspondiente-obstaculos-y-facilitadores-del-uso-de-tics-en-padres-de-clase-media-y-media-baja-en-chile>
- Golden, T. D. (2012). Altering the effects of work and family conflict on exhaustion: Telework during traditional and nontraditional work hours. *Journal of Business and Psychology*, *27*(3), 255-269. <https://doi.org/10.1007/s10869-011-9247-0>
- Gómez, Á. H., & Phillippi, A. (2014). El desarrollo de la competencia mediática en personas mayores: una brecha pendiente. Chasqui. *Revista Latinoamericana de Comunicación*, *124*, 11-18. <http://dx.doi.org/10.16921/chasqui.v0i124.13.g23>
- González, M. A., Fernández, M. V., Urturi, A. F., Bregón, B. H., Moreno, M. M., & Molinero, L. R. (2015). Uso y riesgos de las tecnologías de la información y comunicación en adolescentes de 13-18 años/Use and risks of information and communication technologies in the adolescents from 13 to 18 years. *Acta Pediátrica Espa-ola*, *73*(6), 126-135. Retrieved from <https://medes.com/publication/101197>
- Graells, P. M. (2013). Impacto de las TIC en la educación: funciones y limitaciones. *3 c TIC: cuadernos de desarrollo aplicados a las TIC*, *2*(1), 1-15. <http://dx.doi.org/10.17993/3ctic.2013.21>
- Hernández, M. Á., Vicent, P. L., & Esteban, S. S. (2014). La comunicación en la familia a través de las TIC: percepción de los adolescentes. *Pulso: revista de educación*, (37), 35-58. Retrieved from <http://hdl.handle.net/10017/21126>
- Hohfeld, T., Ritzhaupt, A., & Barron, A. (2010). Connecting schools, community, and family with ICT: Four-year trends related to school level and SES of public schools in Florida. *Computers & Education*, *55*(1), 391-405. <https://doi.org/10.1016/j.compedu.2010.02.004>
- Lasen, M. (2010). Education and career pathways in Information Communication Technology: What are schoolgirls saying? *Computers & Education*, *54*(4), 1117-1126. <https://doi.org/10.1016/j.compedu.2009.10.018>
- Leung, L. (2011). Effects of ICT Connectedness, Permeability, Flexibility, and Negative Spillovers on Burnout and Job and Family Satisfaction. *Human Technology*, *7*(3), 250-267. <https://doi.org/10.17011/ht/urn.2011112211714>
- Lindsay, S., Smith, S., & Bellaby, P. (2007). *The Impact of ICT on Family: Views From An Older Generation. University of Salford. Family and Communication Technology Workshop*. Retrieved from

- https://www.northumbria.ac.uk/static/5007/2008pdf/fact_impactfamily.pdf
- Marciales, G., & Cabra, F. (2011). Internet y pánico moral: revisión de la investigación sobre la interacción de niños y jóvenes con los nuevos medios. *Universitas Psychologica*, 10(3), 855-865. Retrieved from <http://www.scielo.org.co/pdf/rups/v10n3/v10n3a17>
- Mauritzson-Sandberg, E., & Nordmark, T. (2004). ICT-the solution of communication hurdles in the modern family?. *Human Perspectives in the Internet Society: Culture, Psychology and Gender*, 4, 135-141. <http://dx.doi.org/10.2495/CI040141> <http://www.witpress.com/Secure/elibrary/papers/CI04/CI04014FU.pdf>
- Mendoza, N. C., & Chávez, Á. M. (2010). Influencia de las Tecnologías de Información y Comunicación en las Relaciones Familiares. *XXIII Congreso de Investigación CUAM- ACMor. Estado de Morelos, México*. Retrieved from <http://acmor.org.mx/cuamweb/reportescongreso/2012/Sociales/411.pdf>
- Moreno, G. C., & Delgado, S. C. (2013). Evaluación de la competencia digital y las actitudes hacia las TIC del alumnado universitario. *Revista de Investigación Educativa*, 31(2), 517-536. <https://doi.org/10.6018/rie.31.2.169271>
- Mu-eton, M., Suárez, A., & Rodrigo, M. (2015). El uso de recursos web como apoyo a la educación de los hijos en los padres colombianos. *Investigación & Desarrollo*, 23(1), 91-116. <https://doi.org/10.14482/indes.22.2.6615>
- Pablo-Martí, F., Ma-as, E., & Cuadrado, J. R. (2006). *El impacto de las TIC en las familias. Documentos de trabajo. IAES- Instituto Universitario de Análisis Económico y Social*, Universidad de Alcalá, N. 2. Retrieved from <http://dspace.uah.es/dspace/handle/10017/6512>
- Priegue, D. & Leiva, J. (2012). Las competencias interculturales en la sociedad del conocimiento: reflexiones y análisis pedagógico. *Edu-tec. Revista Electrónica de Tecnología Educativa*, (40), 1-12.
- Rompaey, V., Roe, K., & Struys, K. (2002). Children's Influence on Internet Access at Home: Adoption and use in the family context, *Information, Communication & Society*, 5(2), 189-206. <https://doi.org/10.1080/13691180210130770>
- Rueda, E. (2009). Los adultos y la apropiación de tecnología. Un primer acercamiento. *Mediaciones Sociales*, (4), 329-354. <http://revistas.ucm.es/index.php/MESO/article/view/MESO0909120329A>
- Sánchez, J., González, M., & Sánchez, M. (2012). La sociedad de la información: Génesis, iniciativas, concepto y su relación con las TIC. *Revista UIS Ingenierías*. 11(1). Retrieved from <http://revistas.uis.edu.co/index.php/revistausingenierias/article/view/3201/4569>
- Sánchez, M. (2010). Implicaciones de Género en la Sociedad de la Información: Un Análisis desde los Determinantes de Uso de Internet en Chile y México. *Journal of technology management & innovation*, 5(1), 108-126. <https://doi.org/10.4067/S0718-27242010000100009>
- Shin, B., El Sawy, O., Liu, O., & Higa, K. (2000). Telework: existing research and future Directions. *Journal of Organizational Computing and Electronic Commerce*, 10(2), 85-101. https://doi.org/10.1207/S15327744JOCE1002_2
- Sunkel, G., & Trucco, D. (2010). TIC para la educación en América Latina. Riesgos y Oportunidades. *Serie Políticas Sociales*, 167. Retrieved from <http://es.calameo.com/books/004346232b78a304a4e09>
- Verza, F., & Wagner, A. (2010). Uso del teléfono móvil, juventud y familia: un panorama de la realidad brasileña. *Intervención psicosocial*, 19(1), 57-71. <https://doi.org/10.5093/in2010v19n1a7>
- Watt, D., & White, J. M. (1999). Computers and the family life: A family development perspective. *Journal of Comparative Family Studies*, 1-15. Retrieved from <http://www.jstor.org/stable/41603606>
- Yá-ez, C., Okada, A., & Palau, R. (2015). New learning scenarios for the 21st century related to Education, Culture and Technology. *Revista de Universidad y Sociedad del Conocimiento*, 12(2), 87-102. <https://doi.org/10.7238/rusc.v12i2.2454>

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