

The Impact of Electronic Device Usage on Relationship Satisfaction

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Abstract: With the increasing popularity of electronic products, their impact on interpersonal relationships has also undergone significant changes. This paper delves into the intricate relationship between electronic device usage and relationship satisfaction. It provides a comprehensive review and analysis of relevant research, revealing that the utilization of electronic devices can exert a detrimental influence on relationship satisfaction. Within this context, various mediating and moderating variables, predominantly encompassing individual factors and interpersonal perceptions, are identified. Building upon limitations of this paper, future direction can focus on longitudinal analysis, advanced measurement techniques and expanded variables. These findings contribute to the augmentation of existing theories and offer novel insights into enhancing interpersonal communication and relationship satisfaction among individuals.

Keywords: technology, relationship satisfaction, phubbing, mobile phone, electronic devices

1. Introduction

Technology has undeniably become an integral aspect of contemporary social life. With over 5 billion smartphone users worldwide, constituting 68% of the global population, electronic devices have assumed a central role in the establishment and development of interpersonal relationships. Over the past two decades, there has been a notable shift in how electronic devices, including computers, cell phones, and tablets, impact the social patterns of individuals. While existing research has indicated that these devices have the potential to influence various aspects of interpersonal processes, a significant gap remains in our understanding of how electronic devices affect social processes within diverse interpersonal relationships.

Scholars have engaged in extensive debates concerning the influence of technology on interpersonal relationships. Some researchers contend that electronic products have a positive effect on these relationships. For instance, electronic devices facilitate remote communication, bridging geographical gaps and enabling individuals to stay connected despite physical distances. Additionally, they offer increased opportunities for social engagement, particularly benefiting individuals facing challenges in establishing real-life social networks. Notably, studies have demonstrated that the use of social technology can enhance the quality of life for older adults, contributing to successful aging [1]. Among teenagers, interactive technology has been found to facilitate communication with

romantic partners, helping them overcome obstacles such as geographical separation, parental interference, and shyness [2].

Conversely, other researchers argue that electronic products have predominantly negative effects on interpersonal relationships. For instance, in professional settings, computer-mediated communication has been shown to adversely affect relationships among team members, impacting factors like positive emotions and emotional commitment [3]. Within intimate relationships, the use of a partner's mobile phone has been linked to reduced relationship quality and trust [4].

In the contemporary landscape, the use of electronic products for social interaction is on the rise. The mobile phone, as a versatile and highly accessible new media technology, serves as a two-way communication medium and a novel one-to-many information source. Its unique attributes, including real-time communication and global reach, simplify relationship building and maintenance. Consequently, this study seeks to enhance our understanding of the impact of technology on mental well-being and happiness, offering guidance on how individuals can effectively manage the interplay between technology and interpersonal relationships.

2. Literature Review

Numerous studies have explored the multifaceted impact of electronic devices on interpersonal relationships. While early research, dating back to 2006, underscored the potential for electronic products to strengthen familial bonds and expand individuals' psychological networks, fostering ease in maintaining interpersonal relationships [5], more recent investigations have predominantly focused on the adverse effects of electronic device usage on these relationships.

Positive effects of electronic products on interpersonal relationships have been identified. Notably, some studies have highlighted the positive influence of social software on the physical and mental well-being of the elderly, particularly in alleviating loneliness [6]. In the realm of teenage relationships, interactive technology has been found to facilitate communication between romantic partners, helping overcome barriers such as distance, parental interference, and shyness [2]. Such findings suggest that electronic products can enhance certain aspects of interpersonal connectivity.

Conversely, a majority of research has delved into the negative repercussions of electronic product usage on various types of relationships. For example, within the context of family and parent-child dynamics, studies have revealed that parents' mobile phone usage can negatively impact their relationships with their children [7]. Furthermore, parents' phubbing behavior has been linked to children's mobile phone addiction and diminished parent-child relationship satisfaction [8].

Romantic relationships have garnered substantial attention in this body of research. The mere presence of mobile phones has been found to impede the development of intimacy and trust, diminishing empathy and understanding between partners [9]. Additionally, studies have demonstrated a negative correlation between mobile phone interference among partners and relationship satisfaction, as well as individual happiness [4]. The term "phubbing," a portmanteau of "phone" and "snubbing," has gained prominence, describing the act of prioritizing one's phone over direct social interaction [10]. Phubbing behavior has been shown to divert attention from partners, potentially leading to feelings of loneliness, anxiety, and depression in real-world settings [1]. This behavior has further been linked to deteriorating long-term relationship quality, weakened interpersonal bonds, and reduced relationship satisfaction [11]. Partner phubbing has been found to erode romantic relationship satisfaction [12], with specialized scales like the Phubbing Scale and Partner Phubbing Scale developed for measurement [13].

Subsequent research has expanded its focus to colleague relationships, revealing that computer-mediated communication can significantly affect team members' emotions and attitudes [3]. Moreover, supervisor phubbing behavior has been associated with diminished interaction quality between employees and their supervisors [14]. Superficial emotional behavior in virtual work

environments has been linked to reduced employee well-being, job satisfaction, increased fatigue, and higher turnover intentions [15].

Friendships and social interactions have also been examined, with mobile devices found to negatively impact face-to-face social interaction, diminishing interpersonal communication quality and emotional resonance [16]. Notably, smartphone use during social interactions has been correlated with a reduction in smiling frequency, potentially undermining interpersonal relationships [17]

To further elucidate the mechanisms underlying the impact of electronic products on interpersonal relationships, scholars have explored mediating and moderating variables. These variables can largely be categorized into two groups: individual factors and interpersonal perceptions.

Mediating and moderating variables in some studies predominantly revolve around individual factors. Frequently employed mediating variables include positive and negative emotions, as researchers gauge their impact by having participants watch phubbing animations and assessing subsequent changes in relationship satisfaction and emotional states [10]. Other studies have examined variables such as depressive symptoms [4]. Commonly used moderating variables encompass shyness and individual attachment styles, with hierarchical regression analysis often applied to assess their effects on relationships [4].

In contrast, an increasing number of studies have focused on interpersonal perception variables as mediating and moderating factors. Sense of belonging has emerged as a frequently examined mediating variable, with researchers employing Sobel tests to evaluate its significance in mediating the relationship between electronic product usage and interpersonal outcomes [10]. Other intermediate variables include relationship dynamics, perceptions of others' emotional authenticity, sense of exclusion, partner reactions, intimacy, and conflict related to mobile phone usage [1,12,15]. Moderating variables in this context include shared mobile phone usage and mobile phone addiction behaviors. Process software has been used to analyze mediating and moderating effects, often employing partner mobile phone addiction as a predictive variable, relationship satisfaction as an outcome variable, and shared mobile phone usage and participants' own mobile phone addiction behavior as moderating variables [12]. Additionally, variables such as relationship types, team centrality, team size, team tenure, and gender have been explored as potential moderators [3,10].

Since 2018, there has been a growing emphasis on studying the mediating role of interpersonal perception variables, such as the sense of belonging and relationship dynamics. Concurrently, variables like attachment style, shared mobile phone usage, and relationship type have been recognized for their capacity to modulate these relationships. In light of the increasing ubiquity of science and technology, it is evident that electronic products influence interpersonal relationships predominantly through the interplay of individual factors and interpersonal perceptions.

3. Conclusions

This study has undertaken a comprehensive review of the latest developments regarding the impact of science and technology on interpersonal interactions across various types of relationships. Additionally, it has delved into the underlying mechanisms of this influence. From a theoretical perspective, these investigations have bridged existing theories, such as self-determination theory, social demand theory, and social exchange theory, with the ever-evolving landscape of science and technology. These studies have formulated hypotheses regarding the potential repercussions of technological advancements. By aligning with these theoretical frameworks, they have elucidated why individuals' satisfaction with relationships tends to decline following the proliferation of electronic products. It has been demonstrated that electronic products can exert their influence on interpersonal interactions through the manipulation of individual factors, such as positive and negative emotions, as well as interpersonal perception factors, exemplified by the sense of belonging.

Consequently, this body of work significantly extends prior theoretical constructs and serves as a foundation for future research endeavors.

From a practical standpoint, these investigations offer innovative strategies for individuals seeking to enhance interpersonal interactions and bolster relationship satisfaction. For instance, within intimate relationships, nurturing intimacy and partner responsiveness can mitigate the adverse impact of a partner's cell phone addiction on relationship satisfaction. Hence, individuals have the potential to enrich their relationships by fostering heightened emotional connections and improving the quality of interactions with their partners. In the context of colleague relationships, organizations are encouraged to promote the utilization of more direct communication methods, such as video conferencing, to enhance emotional connections among team members. These studies impart valuable insights for individuals striving to mitigate the influence of science and technology on interpersonal interactions. They emphasize the importance of prioritizing face-to-face interactions as a means to augment interpersonal relationships effectively.

In conclusion, this research underscores the critical interplay between science and technology and interpersonal interactions within a diverse array of relationships. It not only advances our theoretical understanding but also equips individuals and organizations with pragmatic approaches to navigate the evolving landscape of interpersonal interactions in the digital age. Ultimately, these studies underscore the significance of maintaining meaningful face-to-face connections as a cornerstone for fostering improved interpersonal relationships.

4. Limitations and Future Directions

As we assess the literature, it becomes evident that research on the influence of electronic products on relationship satisfaction remains in its nascent stages and requires further exploration. Within the current body of research, several limitations stand out, primarily related to research methodologies and variable selection. This section delves into these limitations and outlines potential directions for future research.

4.1. Limitation

4.1.1. Research Methods

One prominent limitation is the dearth of longitudinal research within the existing literature. Many studies primarily capture a snapshot of the current situation, often lacking follow-up assessments. This is particularly noticeable in the context of intimate relationships, where longitudinal investigations are notably scarce. To gain a deeper understanding of how electronic products impact relationship satisfaction over time, future research should incorporate longitudinal designs, tracking changes in subjects' relationship satisfaction over extended periods.

Moreover, it is worth noting that a significant proportion of the literature relies on self-report questionnaire surveys as the primary research method. While these surveys provide valuable insights, they represent a relatively simplistic approach to data collection. Future studies should consider diversifying research methods to include more nuanced and objective assessments of the impact of electronic products on interpersonal interactions.

4.1.2. Variable Selection

In terms of variable selection, many studies have concentrated their efforts on intermediary variables primarily related to individual characteristics, often overlooking objective and interactive indicators. This limitation constrains the depth of our understanding of the mechanisms at play. To address this, future research should explore alternative technology-based measurement indicators for relationship

satisfaction and personal happiness. For instance, the integration of near-infrared devices to monitor changes in brain activity and physiological indicators can offer a more comprehensive understanding of participants' actual behaviors, such as nonverbal reactions and eye movement responses, which can be used to gauge relationship satisfaction.

4.1.3. Additional Research Considerations

Beyond the aforementioned limitations, there are other areas of potential improvement in future research. These include:

1. Citation Coverage: Future studies should aim for more comprehensive coverage of cited documents to ensure the incorporation of the most recent and relevant research findings.
2. Theoretical Background: Efforts should be made to incorporate and build upon more contemporary theoretical frameworks, aligning research assumptions with emerging theories in the field.
3. Regional Variations: Researchers should acknowledge and investigate regional variations in study results, striving for a more universal understanding of the impact of electronic products on interpersonal relationships.

4.2. Future Directions

Building upon these limitations, future research should consider the following directions:

4.2.1. Longitudinal Analysis

Conduct longitudinal research to assess changes in subjects' relationship satisfaction over extended periods, providing a more comprehensive understanding of the long-term impact of electronic products on interpersonal relationships.

4.2.2. Advanced Measurement Techniques

Explore alternative measurement indicators for relationship satisfaction and personal happiness, incorporating advanced technologies such as neuroimaging and physiological monitoring to assess participants' actual behaviors.

4.2.3. Expanded Variables

Expand the array of intermediary and result variables under investigation, delving deeper into the complex mechanisms that underlie the influence of electronic products on interpersonal relationships.

In conclusion, while the current body of research on the impact of electronic products on relationship satisfaction has made significant strides, it is essential to recognize its limitations and chart a path towards more robust and comprehensive investigations. These future directions offer opportunities to refine methodologies, broaden variable considerations, and contribute to a deeper understanding of the intricate relationship between technology and interpersonal interactions.

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