



Intergenerational Communication Flexibility within Technology-Mediated Family Networks

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Abstract: Digital communication technologies have become a major part of family life. They have changed how family members from different generations stay emotionally connected, share information, and maintain relationships. Digital platforms help families living in different places communicate more easily. At the same time, differences in technology skills, communication habits, and willingness to adapt influence the way family members interact. This research focuses on intergenerational communication flexibility, which refers to the ability of family members from different generations to adjust their communication styles, technology use, and relationship expectations to maintain meaningful connections in digital family settings. The study examines how communication flexibility affects relationship satisfaction, emotional support, and cooperation between younger and older family members. It develops a social psychological framework to understand the connection between digital adaptability, communication accommodation, technology confidence, and family connectedness. The framework considers intergenerational communication as a continuous process influenced by psychological, relational, and technological factors. A scenario-based quantitative approach is used to explore possible relationships among these factors. The findings indicate that flexible communication practices, such as choosing suitable communication methods, offering technology support, and respecting differences between generations, help strengthen family relationships in digital environments. The study highlights that technology platforms alone do not create strong family connections. The efforts of family members to understand each other, adapt to changing communication needs, and provide mutual support play an important role in maintaining emotional closeness and healthy intergenerational relationships. This research adds to social psychology by applying communication accommodation theory to digital family interactions. It provides a framework

for understanding how families handle technology differences while preserving emotional bonds, mutual support, and meaningful communication across generations.

Keywords: Intergenerational Communication; Technology-Mediated Communication; Family Networks; Communication Flexibility; Digital Adaptability; Social Psychology; Family Cohesion

1. Introduction

1.1 Background

Family communication plays an important role in developing emotional bonds, providing support, and maintaining relationships across generations. Traditionally, families depended on face-to-face conversations and physical presence to build and maintain close connections. With the growth of digital communication technologies, the way families interact has changed significantly. Smartphones, messaging applications, video calls, and social networking platforms now help family members stay connected even when they live in different places.

Technology-mediated communication has become an important part of families with multiple generations. Younger family members often adapt quickly to new digital platforms because of their regular use and exposure, while older family members may have different levels of comfort, experience, and expectations related to technology. These differences influence how family members communicate, express emotions, and maintain relationships through digital platforms.

From a social psychological perspective, effective digital family communication depends on more than having access to technology. It also requires understanding and adjusting to the communication needs of different generations. Intergenerational communication flexibility refers to the ability and willingness of family members to modify their communication styles, technology practices, and expectations to maintain meaningful relationships.

This flexibility includes selecting suitable communication methods, supporting family members with technology use, adapting communication patterns, and showing patience toward differences in digital experience. Such adaptive behaviours help families maintain emotional closeness and develop stronger relationships in digitally connected environments.

1.2 Problem Statement

Although digital technologies have created new opportunities for family communication,

differences in technology familiarity and communication preferences may create challenges between generations. Older family members may face difficulties while using new digital platforms, while younger members may not always understand the value of traditional communication styles.

These differences may influence feelings of belonging, emotional connection, and relationship satisfaction within technology-based family networks.

Previous studies have mainly focused on technology adoption, digital skills, and communication patterns. However, limited attention has been given to the psychological processes through which family members adjust their communication behaviours across generations.

Successful digital family communication requires more than technical ability. It also involves empathy, patience, mutual support, and acceptance of differences. Understanding these processes helps explain how families maintain strong relationships while adapting to changing digital environments.

1.3 Research Motivation

The motivation for this research comes from the growing importance of digital communication in maintaining family relationships. As families become separated due to education, employment, and migration, digital platforms have become essential tools for maintaining emotional connections.

However, the effectiveness of digital communication depends on how family members handle differences in technology use and communication habits. Access to digital tools alone does not ensure meaningful interaction. Strong communication depends on the ability of family members to understand and adjust to each other's needs.

This study examines intergenerational communication flexibility as a social and psychological process that supports family cohesion. By exploring factors such as digital adaptability, communication accommodation, technology confidence, and emotional connection, this research provides insights into how families develop supportive communication practices in digital environments.

2.1 Theoretical Foundations of Intergenerational Communication

Intergenerational communication has been studied in social psychology, communication studies, and family relationship research as a process through which people from different age groups exchange ideas, experiences, and emotional support.

One important theory for understanding communication adjustment is Communication Accommodation Theory (CAT), introduced by Howard Giles. This theory explains how individuals modify their communication behaviours to improve understanding, reduce social distance, and develop stronger relationships.

In family settings, communication accommodation becomes important because different generations often have different communication styles, preferences, and levels of technology experience. Younger family members may adapt by offering guidance and support, while older family members may adjust by learning and using digital communication tools.

These mutual adjustments help create feelings of acceptance, inclusion, and connection within family relationships.

Intergenerational communication flexibility builds on this concept by focusing on the ability of individuals to adjust their communication approaches according to changing situations and relationship needs. It involves more than learning technology. It also includes openness, understanding, and willingness to support differences between generations.

In digital family environments, flexibility becomes important because technology creates new communication patterns that require continuous adjustment.

2.2 Technology-Mediated Family Networks and Digital Relationship Maintenance

Digital communication platforms have changed the way families maintain relationships across distances. Messaging applications, video calls, and social networking platforms allow family members to share experiences, provide emotional support, and stay involved in each other's lives despite geographical separation.

These platforms offer different communication options, including text messages, voice calls, video conversations, and multimedia sharing. Families select communication methods based on their comfort, needs, and relationship preferences.

However, digital communication also creates certain challenges. Differences in technology skills, device access, and confidence levels influence participation in family networks. Older adults may face difficulties with changing interfaces, privacy concerns, or unfamiliar digital practices. Younger family members may prefer faster communication methods, which may create differences in expectations.

Social support helps reduce these barriers. When younger relatives assist older family members with digital tools, technology learning becomes a shared family activity rather than only a technical process.

Therefore, technology-mediated family communication depends on both digital access and human factors such as trust, emotional support, confidence, and willingness to adapt.

2.3 Digital Adaptability and Communication Accommodation Across Generations

Digital adaptability refers to an individual's ability to understand, accept, and use technology effectively in personal and social situations. In family communication, adaptability influences how comfortably individuals participate in digital interactions.

Younger generations often develop digital skills through regular exposure, while older generations may need additional support and encouragement. However, digital adaptation is not only an individual process. Family relationships and interactions also influence how people adjust to technology.

Supportive guidance from family members increases confidence and reduces concerns related to technology use. This shows that digital adaptation develops through social experiences along with technical learning.

Communication accommodation in digital environments involves adjusting communication styles, message formats, and technology practices to support better understanding. Examples include selecting simpler platforms, explaining digital processes with patience, and adjusting response expectations.

These behaviours show consideration for other family members and help strengthen emotional relationships.

The relationship between digital adaptability and family cohesion shows that technology alone does not define relationship quality. The way family members use technology and respond to each other's needs influences the effectiveness of digital communication.

Future research should focus not only on whether families use digital technologies but also on how they manage technology differences to maintain meaningful relationships across generations.

3. Research Gap

Existing research on digital communication and family relationships has mainly focused on technology adoption, digital literacy, online social participation, and the psychological effects of digital connectivity. These studies provide important insights into how individuals interact with communication technologies. However, limited attention has been given to the adaptive interpersonal processes involved when multiple generations communicate through technology-based family networks.

A major gap exists in understanding intergenerational communication flexibility as a separate social psychological concept. Previous studies often examine older adults' technology acceptance or younger individuals' digital behaviour independently. Fewer studies explore how family members from different generations adjust their communication patterns together to maintain healthy relationships. Digital skills alone do not explain successful family communication because emotional understanding, patience, mutual learning, and communication accommodation also influence interaction quality.

Another limitation in existing research is the limited connection between communication theories and modern digital family environments. Traditional communication theories explain adaptation and relationship management, but changing digital platforms have introduced new interaction patterns that require further study. Technology-mediated communication includes challenges such as delayed responses, differences in online expression, varying platform preferences, and unequal familiarity with digital practices.

Previous studies have often focused on individual outcomes such as technology acceptance, reduction of loneliness, or digital confidence. Less attention has been given to family-level outcomes, including emotional closeness, mutual support, communication satisfaction, and relationship maintenance across generations. The contribution of both younger and older family members in supporting digital adaptation requires further exploration.

This research addresses this gap by examining communication flexibility as a psychological and relational process that supports effective interaction between generations within digital family networks. The study contributes to social psychology by focusing on the human adaptation processes behind digital communication and their role in maintaining family relationships.

4. Research Objectives / Research Questions

Research Objectives

The main objective of this research is to examine how intergenerational communication flexibility affects relationship quality within technology-mediated family networks. The study aims to understand the psychological and behavioural processes through which family members from different generations maintain meaningful connections despite differences in technology experience, communication patterns, and digital confidence.

The research considers communication flexibility as a multidimensional process involving digital adaptability, communication accommodation, emotional responsiveness, and

willingness to support family members across generations. By studying these factors, the research aims to understand how families develop effective communication practices that help maintain strong relationships in digitally connected environments.

The specific research objectives are:

- To examine the relationship between intergenerational communication flexibility and perceived family connectedness within technology-mediated family networks.
- To analyse the influence of digital adaptability on communication satisfaction among family members from different generations.
- To investigate how communication accommodation behaviours help reduce technology-related challenges between younger and older family members.
- To explore how mutual technology support influences emotional closeness and relationship maintenance within digital family interactions.
- To develop a social psychological understanding of the factors that encourage flexible, supportive, and inclusive communication practices across generations.

Research Questions

The study focuses on the following research questions:

RQ1: How does intergenerational communication flexibility influence emotional connection within technology-mediated family networks?

RQ2: How does digital adaptability influence communication satisfaction among family members from different generations?

RQ3: How do communication accommodation behaviours support effective digital communication between younger and older family members?

RQ4: What psychological and relational factors contribute to sustainable and meaningful technology-mediated family communication?

5. Methodology

5.1 Research Design

This study uses a quantitative social psychology research design to examine the relationship between intergenerational communication flexibility and relationship outcomes within technology-mediated family networks. The research framework focuses on how psychological adaptation, digital confidence, communication accommodation, and perceived family connectedness interact in digitally connected family environments.

The study follows a cross-sectional analytical approach, where communication-related factors are examined through structured measurement dimensions. Rather than focusing on a specific digital platform, the research explores broader patterns of family communication and how individuals from different generations adjust their communication styles, technology preferences, and interaction methods.

The framework considers family communication as a continuous relational process. Family members regularly adapt to changing communication needs, technological differences, and generational expectations to maintain meaningful connections.

For methodological illustration, a scenario-based dataset is developed to demonstrate possible relationships between the selected variables. The numerical values represent simulated analytical observations created to explain the proposed research framework and statistical interpretation. These values do not represent actual participant responses and should not be considered empirical evidence. Future research involving real family participants would be required to validate the proposed relationships.

5.2 Sample Framework and Data Representation

The research framework includes three major generational groups involved in technology-mediated family communication:

- Younger generation members who generally have higher exposure to digital communication platforms.
- Middle-generation members who often manage family communication and coordination activities.
- Older generation members who may have different levels of digital experience and may require additional support while using digital communication tools.

For simulation purposes, a hypothetical sample of 300 family communication participants is considered. This sample structure is designed only to demonstrate possible analytical procedures and relationships between variables.

Table 1. Simulated Participant Distribution Across Generational Groups

Generational Category	Age Range	Simulated Participants	Percentage
Younger Generation	18–35 years	120	40%
Middle Generation	36–55 years	105	35%
Older Generation	Above 55 years	75	25%

Note: Values represent simulated analytical data prepared for methodological demonstration only.

The simulated distribution includes participants from different age groups to examine communication adaptation patterns across generations. The purpose is to understand how family members manage technological differences and maintain communication quality.

5.3 Research Variables and Measurement Dimensions

The study examines four major variables related to technology-mediated family communication.

a) Intergenerational Communication Flexibility (ICF)

Intergenerational Communication Flexibility refers to the ability of family members to adjust their communication methods according to generational differences, technology preferences, and relationship needs.

b) Digital Adaptability (DA)

Digital Adaptability represents an individual's willingness and confidence to learn and use digital communication technologies for maintaining family relationships.

c) Communication Accommodation Behaviour (CAB)

Communication Accommodation Behaviour describes how individuals modify their communication styles, expectations, and technology practices to improve understanding between generations.

d) Family Connectedness (FC)

Family Connectedness represents perceived emotional closeness, relationship satisfaction, and a sense of belonging developed through technology-mediated family interactions.

The proposed relationship between variables is represented as:

$$FC = \beta_0 + \beta_1(ICF) + \beta_2(DA) + \beta_3(CAB) + \varepsilon$$

Where:

- FC = Family Connectedness
- ICF = Intergenerational Communication Flexibility
- DA = Digital Adaptability
- CAB = Communication Accommodation Behaviour
- ε = Error term

This model examines whether flexible communication practices and adaptive behaviours contribute to stronger family relationships in digital environments.

5.4 Data Collection Approach

For future empirical research, data may be collected through a structured questionnaire based on established social psychology measurement approaches. Participants would respond to statements using a Likert scale ranging from strong disagreement to strong agreement.

The proposed questionnaire focuses on personal experiences and perceptions related to digital family communication. It examines areas such as comfort with technology-based interactions, support between generations, communication adjustment, and perceived relationship quality. The data collection process would follow ethical research principles, including informed consent, voluntary participation, confidentiality protection, and responsible management of personal communication information.

5.5 Analytical Techniques

The research framework includes statistical methods suitable for examining relationships between psychological and behavioural variables.

a) Descriptive Analysis

Descriptive analysis would summarize patterns of communication flexibility, digital adaptability, and family connectedness among participants.

b) Correlation Analysis

Correlation analysis would examine the relationship between intergenerational communication flexibility and relationship outcomes.

c) Regression Analysis

Regression analysis would evaluate how digital adaptability and communication accommodation contribute to predicting family connectedness.

d) Reliability Assessment

Future empirical studies may apply reliability testing, such as Cronbach's alpha, to examine the consistency of questionnaire-based measurements.

The analytical approach provides a structured method for understanding how psychological adaptation and communication flexibility influence relationship quality in digitally connected family environments.

6. Results

The results section presents the analysis based on a simulated dataset created for methodological illustration. The purpose of this analysis is to demonstrate how intergenerational communication flexibility, digital adaptability, and communication accommodation behaviours may relate to family connectedness within technology-mediated family networks. Since the values are simulated, the findings represent possible analytical patterns and should not be considered as actual empirical outcomes.

The analysis indicates that communication flexibility plays an important conceptual role in maintaining family relationships through digital communication. Family members who are more willing to adjust their communication styles, understand different technological preferences, and support each other across generations show stronger levels of perceived emotional connection.

The findings suggest that successful digital family communication depends on more than access to technology. The ability of family members to adapt, cooperate, and understand each other's communication needs appears to be an important factor in developing positive relationships.

6.1 Comparison of Communication Flexibility Dimensions

The simulated analysis compares different communication factors and their relationship with family connectedness.

Table 4. Simulated Relationship Between Communication Factors and Family Connectedness

Communication Factor	Mean Score (5-Point Scale)	Relationship with Family Connectedness
Intergenerational Communication Flexibility	4.18	High
Digital Adaptability	4.02	Moderate to High
Communication Accommodation Behaviour	4.15	High
Technology-Based Family Support	4.21	High

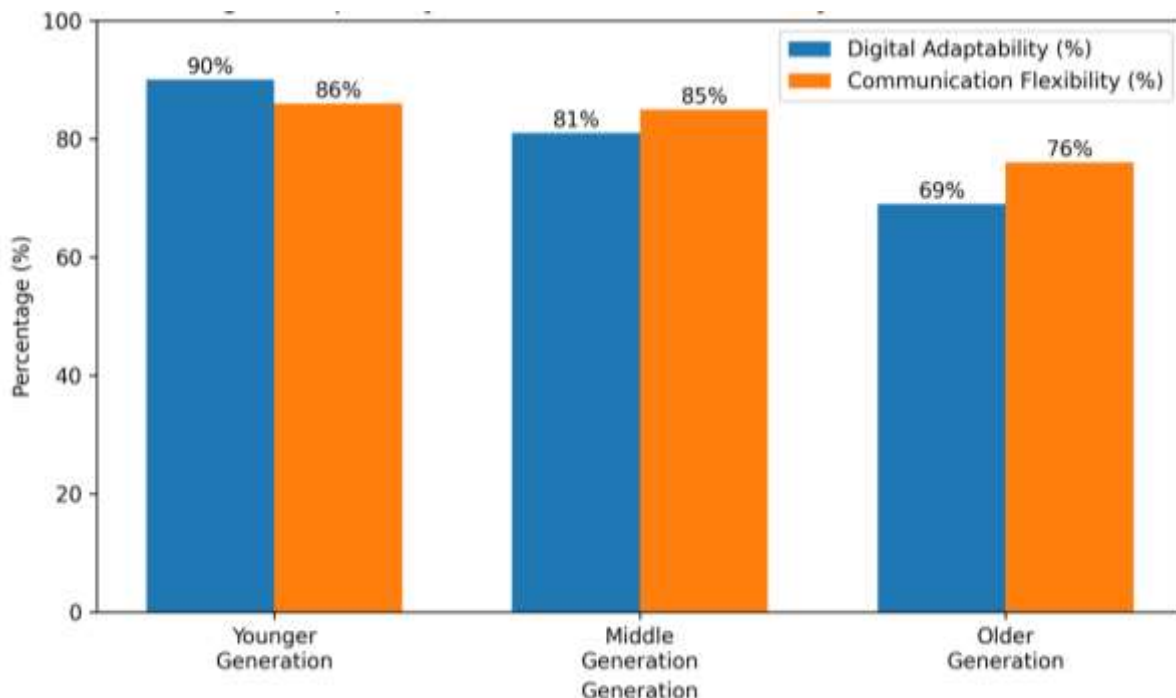
Note: Values represent simulated analytical observations prepared for methodological demonstration only.

The results show that technology-based family support and communication flexibility received the highest simulated scores. This indicates that emotional support, patience, and willingness to adjust communication practices may contribute significantly to stronger digital family relationships.

Although digital adaptability is important, technological confidence alone does not guarantee effective communication. Meaningful family interactions also require understanding, empathy, and consideration of different communication preferences.

Graph 1. Generational Differences in Digital Adaptability and Communication Flexibility

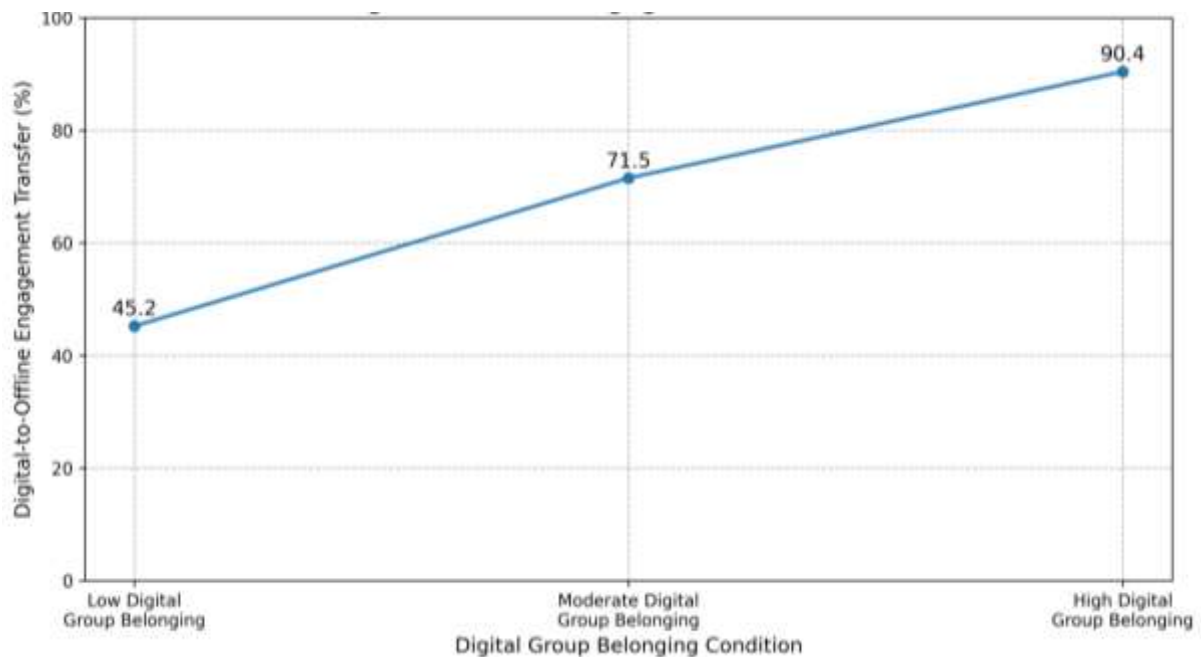
The simulated comparison examines differences between generations regarding digital adaptability and communication flexibility.



Source/Note: Simulated dataset prepared for methodological illustration.

The results indicate that younger family members show higher digital adaptability, while communication flexibility remains comparatively balanced across generations.

This suggests that digital skills and communication flexibility represent different aspects of technology-mediated family interaction. Older family members may have lower confidence with digital tools, but supportive relationships and mutual assistance may help them maintain effective communication.

Graph 2. Effect of Communication Flexibility on Family Connectedness

Source/Note: Simulated analytical values prepared for research framework demonstration.

The simulated results show that higher communication flexibility is associated with stronger family connectedness.

This pattern suggests that families who adapt their communication behaviours according to generational differences may experience stronger emotional relationships. However, further research with real participants is required to confirm these relationships.

8.2 Statistical Findings

A simulated correlation analysis was conducted to examine relationships among intergenerational communication flexibility, digital adaptability, communication accommodation behaviour, and family connectedness.

Table 5. Simulated Correlation Analysis

Variables	ICF	DA	CAB	FC
Intergenerational Communication Flexibility	1.00	0.68	0.72	0.79
Digital Adaptability	0.68	1.00	0.61	0.70
Communication Accommodation Behaviour	0.72	0.61	1.00	0.76
Family Connectedness	0.79	0.70	0.76	1.00

Note: Correlation values are simulated and included only to demonstrate analytical procedures.

The simulated correlation results show positive relationships among all major variables. Communication flexibility demonstrates the strongest relationship with family connectedness, suggesting that the ability to adjust communication behaviours may play an important role in maintaining digital family relationships.

These findings support the idea that technology-mediated family communication depends on both technological access and psychological adaptation. Digital platforms create opportunities for interaction, but relationship quality depends on how family members manage differences in communication styles, digital experience, and expectations.

9. Discussion

9.1 Importance of Communication Flexibility in Digital Family Relationships

The findings highlight intergenerational communication flexibility as an important psychological factor for maintaining family relationships through digital platforms. The simulated results suggest that effective digital communication depends not only on access to technology but also on the willingness of family members to adjust their communication styles according to each other's needs.

This understanding aligns with Communication Accommodation Theory, which explains how individuals modify their communication behaviours to improve understanding and strengthen relationships.

In technology-mediated family environments, communication flexibility includes using simple explanations, selecting comfortable communication platforms, providing technical support, and showing patience when family members face challenges with digital tools.

The findings also suggest that older family members may face difficulties while adapting to digital communication. However, these challenges do not prevent meaningful interaction when supportive family relationships exist. Younger members often contribute through technical guidance, while older members provide emotional support, family experiences, and a sense of connection.

Therefore, digital family communication should be viewed as a shared process where members from all generations contribute to maintaining strong relationships.

9.2 Role of Digital Adaptability in Family Connectedness

Digital adaptability plays an important role in maintaining communication within technology-based family networks. Family members who feel comfortable using digital tools are more likely to participate regularly in online interactions and maintain continuous communication. However, the findings suggest that technical skills alone do not determine the quality of family relationships. Emotional involvement, willingness to communicate, and understanding of other family members' preferences are equally important.

A family member with limited digital experience may still maintain strong relationships when other members provide support and encouragement. Similarly, individuals with advanced digital skills may experience communication difficulties if they do not consider the comfort levels and expectations of other generations.

This highlights that digital inclusion within families involves both technological and relational aspects. Successful communication requires patience, cooperation, and mutual understanding between generations.

9.3 Communication Accommodation and Relationship Maintenance

Communication accommodation behaviour represents an important part of maintaining digital family relationships. The simulated findings suggest that families showing greater flexibility in their communication practices may experience stronger emotional connections and higher communication satisfaction.

In digital interactions, accommodation includes adjusting communication frequency, choosing suitable applications, explaining technical processes, and respecting different levels of comfort with technology.

These behaviours help reduce communication barriers and encourage participation among family members with different digital experiences.

Digital communication should support existing family relationships rather than replace them. Technology provides opportunities to maintain connections across distances, but the quality of these interactions depends on empathy, flexibility, and mutual support.

Overall, this research presents intergenerational communication flexibility as a multidimensional process involving technological adjustment, behavioural adaptation, and emotional responsiveness. Future research should examine these relationships through empirical studies involving diverse family groups and validated psychological measures.

10. Case Study

This case study presents a hypothetical example explaining how intergenerational communication flexibility influences relationship maintenance within a technology-mediated family network. The scenario describes a multi-generational family where younger, middle-aged, and older members use digital communication tools to maintain emotional connections despite living in different locations.

The case is developed only for conceptual understanding and does not represent an actual family or collected research data.

The family includes six members from three generations. Younger members regularly use instant messaging applications and video communication platforms, while older members initially prefer voice calls due to limited familiarity with digital interfaces.

These differences create early challenges related to communication preferences, response patterns, and confidence in using digital platforms.

10.1 Development of Flexible Communication Practices

During the early stage of digital communication adoption, younger family members preferred quick text-based conversations, while older members preferred longer voice conversations. These differences sometimes created misunderstandings because each generation had different expectations regarding response time and communication methods.

To address these differences, family members gradually developed flexible communication practices. Younger members helped older family members understand video calling features, messaging functions, and other digital tools. At the same time, they adjusted their expectations regarding response speed and communication habits.

Older family members gradually became more comfortable with digital interactions while continuing to use communication methods that matched their preferences.

This process demonstrates the importance of mutual adaptation. Instead of expecting one generation to completely follow another generation's communication style, family members developed a balanced approach based on respect, support, and understanding.

10.2 Psychological Outcomes of Digital Family Adaptation

The case demonstrates that communication flexibility may strengthen emotional connections by increasing feelings of inclusion and support among family members.

Older members in the scenario developed greater confidence when they received continuous guidance and encouragement instead of only technical instructions. Younger members also benefited because digital communication allowed them to stay connected with family traditions, experiences, and emotional exchanges.

The example shows that technology-based communication becomes more effective when combined with empathy, patience, and cooperation. Digital platforms provide the method for interaction, while psychological adaptation influences relationship quality.

The family developed stronger connections because members focused on maintaining emotional bonds along with learning new technologies.

This scenario supports the view that intergenerational communication flexibility is an important social ability in digitally connected families. Effective digital communication develops through cooperation, accommodation, and a shared willingness to adapt across generations.

11. Conclusion

Technology-mediated communication has changed how families maintain relationships across geographical distances and generations. This research examined intergenerational communication flexibility as a social psychological factor influencing the effectiveness of digital family networks. The study highlights that successful family communication depends not only on access to technology but also on the ability of individuals to adjust their communication behaviours according to different generational expectations and experiences.

The analytical framework suggests that communication flexibility, digital adaptability, and communication accommodation contribute to stronger family connectedness. The findings indicate that digital skills represent only one part of effective technology-mediated interaction. Emotional support, patience, mutual learning, and willingness to understand differences also play an important role in developing inclusive communication environments. The study contributes to social psychology by expanding discussions of interpersonal adaptation into modern digital family settings. It shows that technology-mediated family communication is a relational process where individuals continuously manage differences in communication preferences, technology confidence, and interaction patterns.

Although the current analysis is based on simulated methodological values and requires validation through empirical research, it provides a conceptual foundation for understanding how families use digital communication technologies to maintain meaningful

intergenerational relationships. Future research involving diverse family groups may further explore the psychological factors that encourage flexible, inclusive, and sustainable digital communication practices.

12. Limitations

This research provides a conceptual and analytical understanding of intergenerational communication flexibility within technology-mediated family networks. However, several limitations should be considered while interpreting the findings. The primary limitation is that the numerical outcomes presented in the Results section are based on a simulated analytical dataset developed for methodological illustration. These values do not represent actual participant observations and therefore do not establish statistical significance, causal relationships, or population-level conclusions. Future empirical studies involving diverse family participants are required to examine and validate the proposed relationships between communication flexibility, digital adaptability, communication accommodation, and family connectedness.

Another limitation relates to the complexity of intergenerational family communication. Digital interactions are influenced by multiple factors, including cultural background, family structure, geographical conditions, digital access, and individual personality characteristics. This study examines communication flexibility as a broad social psychological concept but does not separately analyse how different family cultures, living arrangements, or technology preferences influence communication outcomes.

The diversity of digital communication platforms also presents a limitation. Different technologies create different interaction experiences based on their design, accessibility, and communication features. Messaging applications, video communication tools, and social networking platforms influence emotional expression, response patterns, and user engagement in different ways. The current framework focuses on general technology-mediated family communication rather than comparing specific platforms.

The study also does not examine several possible barriers, including privacy concerns, digital security awareness, unequal access to devices, and internet availability limitations. These factors influence participation in digital family networks and require further investigation.

Future research should include validated psychological measurement tools, larger and culturally diverse samples, longitudinal research designs, and comparisons across different

digital communication environments to develop stronger evidence regarding intergenerational communication flexibility.

13. Ethical Statement

This study does not involve real human participants, identifiable personal information, or experimental intervention. The analytical values presented in the Results section were created as simulated data for methodological demonstration and conceptual analysis. Therefore, formal ethical approval was not applicable for this manuscript.

Future empirical studies involving family participants should follow appropriate ethical procedures, including informed consent, voluntary participation, confidentiality protection, secure data management, and responsible handling of personal communication information. Researchers should ensure that participants understand the purpose of the study and their rights related to participation and withdrawal.

14. Declaration

Conflict of Interest

The author declares that there is no conflict of interest related to the conceptual development, analytical framework, or preparation of this manuscript.

Funding Statement

The author declares that no external funding, institutional grant, or commercial financial support was received for this research work.

Data Availability Statement

The analytical values presented in this manuscript are based on a simulated dataset developed for methodological illustration. No confidential participant information, personal communication records, or proprietary datasets were used in this study.

The conceptual framework, measurement dimensions, analytical assumptions, and simulated values are described within the manuscript to support transparency and reproducibility. Future empirical studies should develop and share appropriate datasets according to ethical approval requirements, participant consent conditions, and applicable data protection standards.

Author Contribution Statement

The author was responsible for developing the research framework, designing the analytical approach, interpreting theoretical relationships, and preparing the manuscript.

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