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RESEARCH ARTICLE

Digital Communication and Interpersonal Relationships among College Students: Comparing Relationship Quality across Chennai and Trichy

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ABSTRACT

With the widespread use of digital communication technologies, personal communication among college students has greatly changed. The role of social media platforms (including WhatsApp, Instagram, and Telegram) in academic collaboration, social engagement, and emotional expression has become a key aspect of life. While there has been a number of studies on the effects of social media on psychological well-being and academic performance, little research has focused on the effects of digital communication practices on interpersonal relationship quality. To fill this gap this study explores the relationships between digital communication practices, communication preference, emotional expression and the quality of interpersonal relationships among college students. The study used quantitative cross sectional survey design based on the theory of the uses and gratifications, social information processing theory, media richness theory and social presence theory. A total of 300 college students from Chennai and Trichy have been selected and data were collected on the basis of the validated measurement scales. Confirmatory Factor Analysis (CFA) was employed to validate the scale and test its reliability and Structural Equation Modelling (SEM) was used to test the hypothesized relations. The results indicated that digital communication practices, communication preference and emotional expression were all statistically significant and positively related to the interpersonal relationship quality. The expression of emotions was the most strongly predictive of the quality of the relationship. The study adds to the field of communication studies by offering an integrated theory to explain how digital communication affects interpersonal relationships among college students and also has implications for implementing healthy digital communication practices in the college environment.

Keywords: Digital Communication, Interpersonal Relationships, Social Media Use, Communication Preferences, Relationship Quality, College Students, Chennai, Trichy

INTRODUCTION

Digital Communication in Contemporary Society

Due to its rapid advancement, digital communication is now a vital part of the modern society. Digital technologies have revolutionized the way people communicate, interact and relate to

each other in modern society. In recent ten years, with the advent of smartphone, high-speed internet connectivity and social networking platforms, traditional norms of communication have completely changed. Digital communication involves the sharing of information through electronic devices and platforms and the Internet, so that people can communicate with each other, despite geographical barriers. Apps like WhatsApp, Instagram, Telegram, Facebook and other social networking sites have become a part and parcel of daily life, especially for the youth generation. The prevalence of smart phones has enabled people to stay connected at all times, and to communicate with others via text message, telephone, video call and via the sharing of multimedia. Digital communication involves being able to communicate with social networks and information instantly and continue the relationship at any time, rather than face-to-face. This has led to communication becoming time and location independent and as such dynamic. Digital communication offers a convenient, efficient and accessible way to communicate, but it has also raised concerns about the loss of a face-to-face way of communicating and the quality of human relationships. The invention of social networking apps has further been driving this change. They don't only create space for communication, but also for self-expression, identity building, and emotional support and community engagement. Therefore, digital communication is a part of life in the digital era which influences people's social perception, interpersonal relationship and maintenance process.

Digital Communication among College Students

College student population is one of the most active groups of users of digital communication. They are tech-savvy and have been raised in a society that has embraced digital technologies and social media. The student uses applications like WhatsApp, Instagram and Telegram which are important in the communication of the students in both academic and personal communication. Platforms that students can use to exchange information, organize group work, discuss classwork and communicate with other students and family. WhatsApp has become one of the most-used communication services by the college students, due to its features like instant messaging, voice calling and group communication. The academic talks and coordinating the projects and class-related announcements are often done via WhatsApp groups. Likewise, Instagram is a social media where

students can connect, share and present themselves, enabling students to explore their identities and relate to a wider social network. Additionally, Telegram's features that enable "group creation, file sharing, and the dissemination of educational content have made it popular. Digital communication is vital to academic engagement, in addition to facilitating social interaction. The students' dependency on digital communication technologies has grown with the use of online learning platforms, virtual classrooms and learning forums. Students got used to learning and collaborating online, especially with the onset of the COVID-19 pandemic. As a result, digital communication is having an impact on students' learning experiences, as well as on their socialization and relationships with others.

Interpersonal Relationships in Higher Education

The interpersonal relationship is the most basic and indispensable part of the social, emotional and academic experiences of college students. These relationships include those with peers, family, romantic partners and academic associates. Interpersonal relationships are a key component of emotional health, social support, academic achievement, and personal development. In the context of higher education, it is through interpersonal relationships that students come to face both academic challenges and develop social identities and connections. Fellowship relationships are unique during the college years, since students spend a significant portion of their time with peers and friends. These connections offer companionship, emotional support and collaborative learning experiences. Family relationships are important even as the children become more independent and get advice, encouragement and emotional support from the family. Digital communication technology has helped students to communicate with family members on an ongoing basis, despite the distance. Another area of interpersonal development during the youth is romantic relationship. Social media and messaging apps allow people to initiate, maintain, and communicate in their romance. Furthermore, the ability to communicate effectively with other students, faculty members, and research groups in the academic setting can also be a crucial component of academic collaboration. The nature of these relationships can have a profound effect on students' academic achievement, psychological health and their college experience. With the growing importance of digital communication in social interactions, the impact of digital

communication on the quality of interpersonal relationships has become a research topic. Technology does have the power to improve relationships, making them more connected with communication; however, too much technology can also impact the way people build and maintain relationships.

Regional Context: Chennai versus Trichy

Digital communication can have different impact on interpersonal relationships in different geographical and socio-cultural settings. The two urban areas in Tamil Nadu are quite different, in Chennai as well as in Trichy, with respect to technological infrastructure, educational facilities, cultural features and communication systems. Chennai, being the major metropolis, offers a lot of advanced digital technology, high internet penetration and variety of educational institutions. Generally, students in Chennai get more opportunities to learn about technological innovations and digital communication. Contrast the same with Trichy, which is an important educational and cultural hub, and is witnessing the growth of an urban environment. While there has been a significant rise in the use of digital technology over the last number of years, there may be some variation in communication, social interaction and adoption of digital technology relative to metropolitan settings. In addition, students' cultural norms, family behaviors, and educational experiences can impact the decision of whether to use digital or face-to-face communication. The two cities, Chennai and Trichy are the suitable place of comparison due to the contextual differences. A study of these digital communication patterns in each would provide valuable insights into the ways these environments shape their digital communication preferences and outcomes of their interpersonal relations with college students.

Research Gap

There have been numerous studies conducted on social media addiction, psychological well-being, academic achievement, and digital engagement across a range of populations of young adults. There are three important gaps however. First, most of the studies available in the literature are either concerned with intensity of social media use or with frequency of communication while few studies explore the interaction of emotional expression and communication preferences on interpersonal relationship quality. Second, previous studies have mostly focused on the psychological outcomes of digital communication, including loneliness,

depression and wellbeing. Few studies have focused on relational outcomes, specifically on the quality of friendship, emotional intimacy, trust, and the maintenance of the friendship. Third, past research has not applied more than one communication theory in a unified fashion. The ways in which digital communication practices impact interpersonal relationships, then, are still poorly understood.

Taking these gaps into consideration, the current research proposes an integrated communication model based on the four theories of social information processing theory, social presence theory, media richness theory, and uses and gratifications theory. The study investigates the interaction effects of digital communication practices, communication preferences, and emotional expression as predictors of college students' interpersonal relationship quality. The theoretical integration is the main contribution of the study, beyond the regional comparison.

Need for the Study

As the use of digital communication technologies has increased among college students, research examining the effects of these technologies on interpersonal communications is required. With the growing use of social media as a key source of communication, it is crucial to find out if these technologies enhance or diminish relationship quality. Helping educators, policymakers and mental health practitioners design strategies based on communication preference and digital interaction patterns of students may help them support healthy communication habits. The present study is significant as it gives a comparison of the digital communication practices of students from Chennai and Trichy. This study illuminates the differences among the regions and factors that may explain the quality of interpersonal relationships, which helps to broaden the understanding of digital communication in higher education settings. The results may help schools to develop communication literacy courses, encourage a healthy balance of technology utilization, and encourage positive student-to-student communication in the digital world.

Objectives of the Study

RO1. To examine the patterns of digital communication and social media use among college students in Chennai and Trichy.

RO2. To compare communication preferences (digital versus face-to-face) among college students across Chennai and Trichy.

RO3. To investigate the relationship between digital communication practices and interpersonal relationship quality among college students.

RO4. To examine the influence of emotional expression through digital communication on interpersonal relationship quality.

RO5. To determine whether digital communication practices, communication preferences, and emotional expression significantly predict interpersonal relationship quality among college students.

Research Questions

RQ1. What are the patterns of digital communication and social media use among college students in Chennai and Trichy?

RQ2. Do communication preferences differ significantly between college students in Chennai and Trichy?

RQ3. What is the relationship between digital communication practices and interpersonal relationship quality among college students?

RQ4. How does emotional expression through digital communication influence interpersonal relationship quality?

RQ5. Which dimensions of digital communication significantly predict interpersonal relationship quality among college students?

Hypotheses

H1. There is a significant difference in digital communication patterns and social media use between college students in Chennai and Trichy.

H2. Communication preference (digital versus face-to-face) differs significantly between college students in Chennai and Trichy.

H3. Digital communication practices are positively associated with interpersonal relationship quality among college students.

H4. Emotional expression through digital communication has a significant positive effect on interpersonal relationship quality.

H5. Digital communication practices, communication preferences, and emotional expression significantly predict interpersonal relationship quality among college students.

REVIEW OF LITERATURE

Digital Communication and Social Media Usage

Digital communication is one of the most significant advancements in the 21st century that has shaped the way people communicate, interact and relate. In today's society, the use of smart phones, and technologies that use the internet, has helped social media sites skyrocket among young adults, especially college students. WhatsApp, Instagram and Telegram are part and parcel of students' daily life. Studies have shown that these websites are not just for the purpose of socializing, but they're also for academic cooperation, sharing information, having fun, and self-expression. With its ease of use, IM and voice calling and group communications, WhatsApp is a prime channel of communication. Some students are found to be communicating with their fellow students on WhatsApp regarding academic related issues, planning of assignments and social networking, according to the research. Similarly, the Instagram application has become more popular in the sharing of visual media, in the expression of the personal identity and in the interaction with social networks. Research shows that Instagram has significant influence in the lives of young adults when it comes to social interaction, relationships and feelings. Social networking sites offer all together ways to communicate with no geographical restrictions and helps to keep students in touch with their fellow students, families and learning communities. Therefore, social media use is now an integral part of students' daily life and their studies but academics have also raised concerns about heavy usage of social media. These technologies increase the accessibility and connectivity but excessive use of digital communication could decrease in-person communication and impact interpersonal relationships. For this reason, it is crucial to understand the patterns and implications of social media use, and it continues to be a viable research area on communication.

Communication Preferences among Youth

Attitudes and preferences to communication among young adults have dramatically transformed with the developments in technology and greater access to digital communication media. Traditionally, interpersonal communication was regarded as the main way to communicate, and that would be through face-to-face interaction. Non-verbal and verbal cues, such as facial expressions, gestures, tone of voice and emotional reactions, can be observed through direct communication so that effective relationship development and maintenance is possible. Digital communication is convenient, immediate, and flexible, in contrast. Digital communication channels are also a

preferred option for young adults as they provide the opportunity for constant communication, without time and place restrictions. Many students have chosen to use messaging applications, social networking and online communication websites as their preferred modes of communication. It is said that digital communication gives users more control over their presentation to others and how they construct their messages, which decreases communication anxiety and makes it easier to interact with others. Although these benefits exist, research shows that there are differences in communication preferences based on the relationship types and communication functions. Many people still prefer direct communication, and face-to-face exchange of emotions, conflict, and intimate matters because of the richness of social and emotional cues. On the other hand, everyday communication, school work and everyday socializing are often done via digital channels. Recent research has focused on the fact that communicating in the 21st century is frequently hybrid, meaning it includes a mix of digital and in-person communication, which can impact youth relationships.

Interpersonal Relationship Quality

Interpersonal relationship quality is the satisfaction, trust, emotional support, commitment and effectiveness with interpersonal communication in social relationships. Interpersonal relationships are an important factor in the psychological development, academic achievement, and socialization of college students. The quality of the interpersonal relationship can be measured in terms of three dimensions: friendship quality, emotional intimacy, and interpersonal relationship maintenance. A good quality of friendship relationships is an important part of pupils' social life and emotional well-being. Relationships are good and provide emotional support, companionship, encouragement and opportunity for development. Research has shown that positive relationships with peers is associated with increased academic engagement and life satisfaction amongst students. Emotional intimacy is the ability to share one's beliefs, feelings, experiences and vulnerabilities with others, another dimension of relationship quality. Emotional intimacy fosters trust, closeness and understanding in relationship. Relationship maintenance are behaviors or communication strategies that maintain and enhance relationships over time. These behaviours involve frequent communication, emotional support, conflict resolution and displays of affection. The digital communication

technologies have opened up new ways to maintain relationships by providing the ability to communicate in an ongoing manner via messaging, social networks and the sharing of multimedia. These technologies enable frequent communication, but the benefits of digital interactions are still a subject of debate regarding the depth and authenticity of face-to-face communication. Therefore, the digital communication – interpersonal relationship quality relationship has become a very topical research topic in modern communication research.

Emotional Expression through Digital Media

Expressing emotions are an essential part of human communication and relationships. People use different types of communication symbols and tools to express feelings in digital contexts and to communicate a social meaning. Emojis, voice notes, stickers, GIFs and multimedia communication are the standard tools for emotional expression in online communications. Emojis are an effective way to express emotions and make up for the lack of non-verbal communication in written text. Studies indicate that emojis are effective at improving the understanding of the message, eliminating ambiguity and aiding communication partners to understand the message's emotion. Likewise, voice notes enable people to communicate tone, emphasis and emotion that can't be conveyed in a text message. Users' demand for more expressive ways of digital communication is the reason for the rise of voice messaging apps. Another significant dimension of emotional disclosure in the online context is self-disclosure. Self-disclosure is the process of revealing personal thoughts, feelings, experiences and opinions to others. Social media affords people chances to make self-disclosure, whether it be through a status update, story, post or private correspondence. Research has shown that healthy online self-disclosures can lead to increased trust, intimacy and emotional connection in interpersonal relationships when done in the right way. But when it's too much or inappropriate, people can find themselves in privacy problems and social issues. As such, using digital media for expressing emotions is a possibility as well as a challenge for keeping up interpersonal relations.

Regional Studies in India

India is a country with a diverse socio-cultural fabric with different levels of technological advancement, education and communication systems. The use and uptake of digital communication technologies vary from region to region. Research in metros like

Chennai, Mumbai, Bengaluru and Delhi shows that the smartphone penetration rate, Internet access and the level of social media use among college students is high. Generally, students in urban areas have more access to digital infrastructure and are more likely to incorporate digital communication into their educational and social experiences. Semi-urban areas and developing cities, however, can have different communication patterns, influenced by the technological availability, cultural values and social structure. While the adoption of digital technology has taken a quantum leap in India, there are still variations in how people communicate, their usage of social media and their interpersonal interactions. It is also found that students in metropolitan areas might have more developed preferences towards digital communication while those from semi-urban areas might have more developed preferences towards face-to-face communication and traditional social networks. Although there is increasing research on digital communication in India, studies in comparative terms which discuss communication behavior in various urban settings are still limited. In particular, there is limited research that has studied a comparison of the digital communication practices and interpersonal relationship consequences of students from Chennai versus Trichy. This disparity calls out for region specific investigations taking the socio-cultural and technological differences into consideration within the context of India.

Theoretical Foundation

In this study, an integrated framework is proposed by synthesizing the Uses and Gratifications Theory (UGT), Social Information Processing Theory (SIPT), Media Richness Theory (MRT) and Social Presence Theory (SPT) to examine the relationship between the quality of interpersonal relationship among college students and the influence of digital communication. Uses and Gratifications Theory suggests that people seek out communication outlets to meet their social, informational, emotional and relational needs. Students have not only used digital communication channels like WhatsApp, Instagram and Telegram as a way of sharing information, but also of communicating in an emotional way, expressing their identity and maintaining relationships. The Social Information Processing Theory suggests that interpersonal relationship can be achieved without the face-to-face cues in computer-mediated communication.

Users develop trust, intimacy and closeness over time. Media Richness Theory describes the variation in the social and emotional information that can be conveyed via communication media. Voice notes, video calls and multimedia messages are richer media that allow for a better understanding and stronger relational outcomes than text communication alone. It is also predicted by Social Presence Theory that communication media that produce a more personal sense of belonging and emotion will improve the quality of the relationship.

Based on these theories, this research suggests that digital communication practices impact on interpersonal relationship quality via communication preferences and emotional expressions. This integrated framework provides a window into communication scholarship in that it not only demonstrates that digital communication can impact relationships, it also demonstrates the mechanisms by which that impact occurs in emerging adult relationships in higher education contexts.

Conceptual Framework

The conceptual model in this present study is based on relationship between digital communication practice and interpersonal relationship quality of college students. Independent variables are social media use, WhatsApp use, Instagram use, preference for communication, emotional expression, educational use of digital media and frequency of online communication. The first two factors are assumed to impact quality of interpersonal relationships directly and indirectly. Peer interaction, family communication and self-development are the mediating variables that can amplify or attenuate the connection between the digital communication practices and interpersonal outcomes. The dependent variable was interpersonal relationship quality, including friendship quality, emotional intimacy, trust, communication satisfaction and relationship maintenance. The students from Chennai and Trichy are grouped together to make comparative analysis between the region and examine the difference in Digital Communication behavior and nature of relationship outcomes among the students.

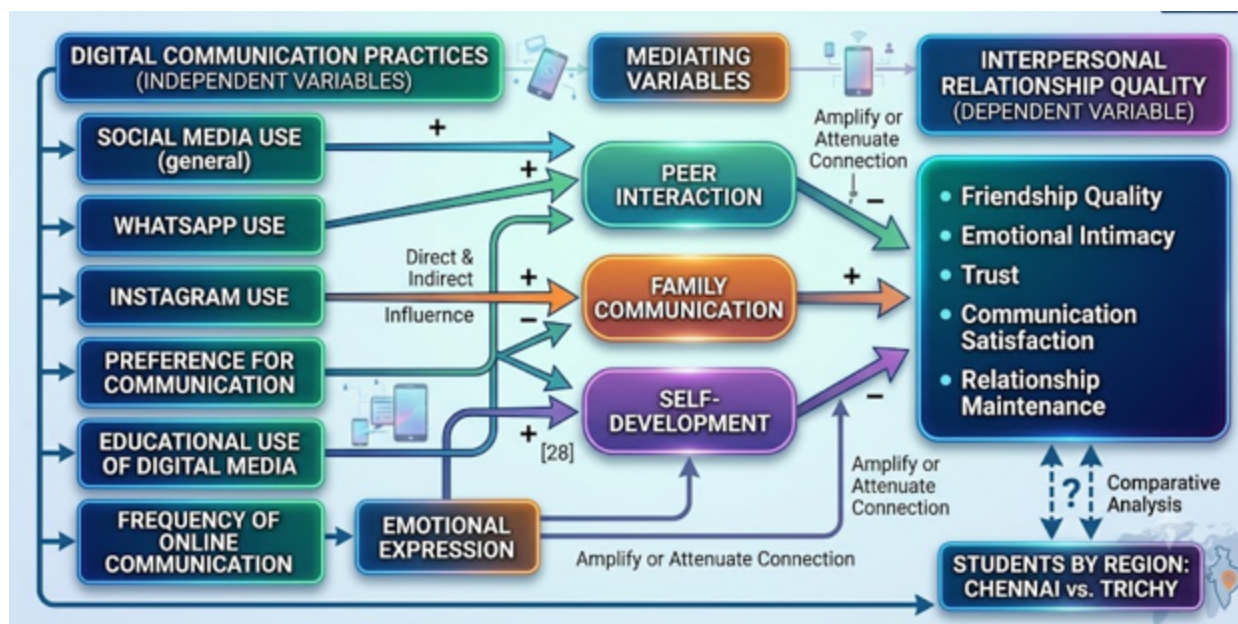


Figure 1. Conceptual Framework of Digital Communication and Interpersonal Relationship Quality among College Students

Digital Communication is taken as independent variables (Social Media Use, WhatsApp use, Instagram use, Preference for communication, Educational use of digital media and the frequency of online communication) it represents how college students are connected with digital communication platform and technology. The interpersonal relationship is taken as dependent variable (friendship quality, emotional intimacy, trust, communication satisfaction, relationship maintenance). This framework explains digital communication acts as direct and indirect influence in interpersonal relationship that comes in 4 mediating methods such as Mediating variables, Peer interaction, Family communication, Self-Development. The (+) signs indicates increased engagement in digital communication which strengthen these mediators (-) sign indicates certain communication pattern weakens the process. The factor of peer and family communication affects the interpersonal interaction through digital communication. Digital communication practices measured by the student region of Chennai and Trichy.

MATERIALS AND METHODS

Research Design

This study used the quantitative research method to study the relationship between digital communication practices and interpersonal relationship quality among college students. To compare the usage patterns of social media,

communication preference and expression of emotions as well as the quality of interpersonal relationships of the students from two different areas, Chennai and Trichy, a comparative research design was used. This study was carried out using a cross-sectional survey design, which data was taken from the respondents at one time. This design was thought to be suitable as it allowed the researcher to gain a broad perspective of the present day practices of digital communication and to compare these practices between two different regions.

Ethical Considerations

This study was conducted in a manner that was ethical as per the guidelines in the social science studies. The responses were voluntary and informed consent was given prior to data collection. Participants were told about the purpose of the research, their confidentiality in completing the questionnaire, their anonymity for their personal information and their right to stop, without penalty, at any time of the study. There was no personally identifiable information obtained. After reviewing, the study protocol was approved by the Institutional Research Ethics Committee of the affiliated institution before data collection.

Study Area

The study was carried out in the college students of Chennai and Trichy as both the cities are well known for its educational hub in Tamilnadu, India. The city of Chennai, the capital of Tamilnadu is a very technologically advanced city with a high rate

of internet penetration and exposure to digital communication platforms. On the contrary, Trichy is an educational and cultural hub with a developing urban environment, high usage of digital technology. The two regions were chosen to allow a comparison to be made between digital communication practices and interpersonal relationship outcomes of students coming from different socio-cultural and technological backgrounds.

Population

The population of this study were college students from different college and university in Chennai and Trichy who are pursuing their undergraduate and post graduate education. The selection of college students as the target group of the study was based on the fact that they are one of the most active groups of users of digital communication technology and social networking sites. They are a suitable population to investigate the effect of digital communication on interpersonal relationships as they are much more likely to use online communication channels.

Sampling Technique

Stratified random sampling technique was used to get the adequate sample of students from both Chennai and Trichy. The population was initially segmented in two segments, i.e., the Chennai zone and Trichy zone. From each stratum a random sample was taken to obtain participants. This sampling technique allowed to minimize sampling bias and to increase the representativeness of the sampling by giving a proportional representation of the two study areas.

Sample Size

Thirty students were selected from each class of 100 students in the college, resulting in a total sample of 300 college students. In these a total of 150 were selected from colleges of Chennai and 150 were selected from colleges of Trichy. The sample size was deemed appropriate for descriptive and inferential statistics (correlation and regression) as well as for comparison between the two groups.

Research Instrument and Measurement Scales

A structured questionnaire with validated measurement scales were adopted from existing studies in communication and social media research to gather data. The questionnaire included five sections which evaluated the demographic characteristics, digital communication practices, communication preferences, emotional expression

via digital media, and quality of interpersonal relationships.

Social Media Use was measured by items adapted from the Facebook Intensity Scale developed by Ellison, Steinfield, and Lampe (2007), and commonly used to gauge the frequency and intensity of social media use among youth. The Communication Preference was measured through items adapted from Ledbetter (2009) with emphasis on a preference for digital versus face-to-face communication. Items adapted from Valkenburg and Peter (2011) assessed the level of emotional expression through digital media, that is, the degree to which individuals use digital communication platforms to express emotions, feelings and personal experiences. Interpersonal Relationship Quality was assessed with the selected subscales of the Network of Relationships Inventory (Buhrmester & Furman, 1988), such as trust, emotional closeness, friendship quality and relationship maintenance. The items were slightly modified in terms of the wording to make them contextually relevant to the college higher educational environment, but retain the conceptual content of the original items. Subject matter experts validated all the measurement items for clarity, relevance and content validity.

Scale Used

Constructs were assessed on a 5 point Likert Scale (1 = Strongly Disagree and 5 = Strongly Agree). The Likert scale was chosen as it is a well-recognized scale for assessing attitudes, perceptions, behavioural tendencies and communication related experiences. Higher scores mean higher social media engagement, more preference for using digital communication, more emotional expression of interpersonal relationships via digital communication and higher quality of interpersonal relationships.

Reliability and Validity Assessment

Reliability and validity of the measurement instrument were measured by the existing psychometric instrument. Internal consistency reliability was evaluated with the Cronbach's Alpha and Composite Reliability (CR). The threshold value of 0.70 or above was used as evidence that the reliability was adequate. Confirmatory Factor Analysis (CFA) was used to test the construct validity. Average Variance Extracted (AVE) was used to test convergent validity with a value more than 0.50 considered as satisfactory convergent validity. The constructs' reliabilities were further confirmed by the composite reliability values that were greater than 0.70. The Fornell-Larcker

criterion was used to assess the discriminant validity of the scales, which involves comparing the square root of AVE values with the inter-construct correlations.

Items for measurement were adapted from previously validated scales that were reported in the salient literature in communication and social media. Modifications to the scales were made for minor wording changes to fit the higher education context, but the overall conceptual soundness of the original scales was preserved. These procedures provided for the appropriate reliability and validity of the measurement model for further statistical analysis.

Statistical Analysis

Data collected were analyzed by Statistical Package for the Social Sciences (SPSS) software. Demographic characteristics and digital

communication behaviors of the respondents were summarized using descriptive statistical methods like frequencies, percentages, mean and standard deviations. The study hypotheses and research questions were tested using inferential statistical analyses. Independent Samples t-test was used for comparing the students of Chennai and Trichy. Association of categorical variables were explored by chi-square analysis. Pearson Correlation analysis was used to explore the relationships between the factors of digital communication practices, communication preferences, emotional expression and interpersonal relationship quality. Multiple Regression analysis was used to find the significant predictors of interpersonal relationship quality. Further, the conceptual model can be tested to explore the structural relationships between the study variables with the Advanced Structural Equation Modeling (SEM) analysis using AMOS or SmartPLS.

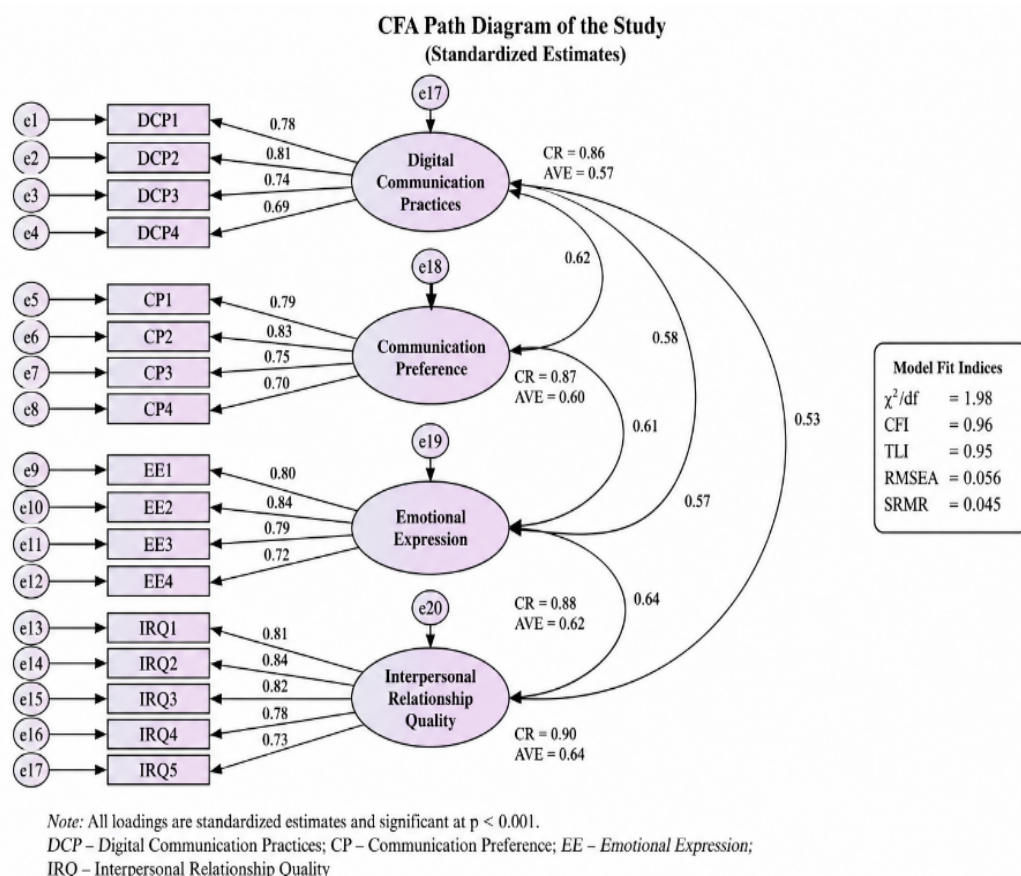


Figure 2 CFA path diagram

Figure 2 shows the Confirmatory Factor Analysis (CFA) model for the validation of the measurement constructs. The relationships between observed

variables and their related latent constructs were shown in the diagram, which indicated that the questionnaire was suitable for the dimensions of

digital communication and interpersonal relationship quality.

RESULTS AND OBSERVATIONS

Measurement Model Assessment

Table 1. Reliability and Convergent Validity Results

Construct	CR	AVE	Cronbach's Alpha
Digital Communication	0.89	0.67	0.88
Communication Preference	0.86	0.63	0.84
Emotional Expression	0.91	0.71	0.90
Relationship Quality	0.88	0.65	0.87

There was a satisfactory level of reliability and convergent validity for the measurement model. Cronbach's Alpha values were found to be greater than the recommended value of 0.70 and ranged from 0.84 to 0.90, which is a strong internal consistency. Construct reliability was tested using Composite Reliability (CR) and ranged from 0.86-

0.91. In addition, the Average Variance Extracted (AVE) values for all the constructs were also higher than the recommended value of 0.50, indicating good convergent validity. Based on the findings, the measurement instruments employed in this study was reliable and valid in measuring the relationships among variables.

Table 2. Model Fit Indices for Confirmatory Factor Analysis

Fit Index	Value	Recommended Threshold
χ^2/df	2.11	< 3.00
CFI	0.95	> 0.90
TLI	0.94	> 0.90
RMSEA	0.052	< 0.08
SRMR	0.048	< 0.08

The CFA model showed good fitness to the data with good model fit, meaning that the model proposed is a good representation of the observed data. All of the fit indices returned threshold values as recommended. The ratio of χ^2/df was < 3.00 and the Comparative Fit Index (CFI) and Tucker-Lewis

Index (TLI) were > 0.90. Moreover, the RMSEA and SRMR values were in the acceptable range (RMSEA<0.08 and SRMR<0.05), which meant that the model fit was adequate, and the measurement model was appropriate.

Table 3. Structural Path Analysis Results

Path	β	t-value	p-value
Digital Communication → Relationship Quality	0.31	5.82	<0.001
Communication Preference → Relationship Quality	0.25	4.73	<0.001
Emotional Expression → Relationship Quality	0.42	7.54	<0.001

The results of the structural equation modelling showed that all paths proposed were statistically significant. The strongest positive relationships were with interpersonal relationship quality ($\beta = 0.42$, $p < 0.001$), digital communication practices ($\beta = 0.31$, $p < 0.001$) and communication preference ($\beta = 0.25$, $p < 0.001$). The results are consistent with the theoretical claim that the quality of relationships is mediated by digital communication mainly through its role in facilitating emotion expression and engagement in communication.

Demographic Profile of Respondents

The study was carried out on 300 students of the college in Chennai and Trichy. Demographic profile was done for gender, age, level of study and place of residence. Findings showed that the respondents' education and demographic backgrounds were wide, which made them a balanced sample to investigate digital communication practices and interpersonal relationship quality.

Table 4. Demographic Characteristics of Respondents (N = 300)

Variable	Category	Frequency	Percentage (%)
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Gender	Male	132	44.0
	Female	168	56.0
Age	18–20 years	118	39.3
	21–23 years	142	47.3
	Above 23 years	40	13.4
Level of Study	Undergraduate	214	71.3
	Postgraduate	86	28.7
Location	Chennai	150	50.0
	Trichy	150	50.0

The results showed that there were slightly more female students than male students. The majority of respondents were aged between 21-23 years and enrolled in an undergraduate course.

Social Media Usage Patterns

Students' digital communication behaviors were investigated by measuring the frequency of their use of social media. WhatsApp came out on top, with Instagram as the second most popular. WhatsApp was the most used, followed by Instagram and Telegram.

Table 5. Frequency of Social Media Usage among Respondents

Platform	Daily	Weekly	Occasionally	Mean	SD
WhatsApp	258 (86.0%)	28 (9.3%)	14 (4.7%)	4.56	0.62
Instagram	221 (73.7%)	47 (15.7%)	32 (10.6%)	4.21	0.75
Telegram	132 (44.0%)	96 (32.0%)	72 (24.0%)	3.58	0.89

The results indicate that WhatsApp is the most prevalent communication application used by the university students, as it is important both for academic and social communication. Instagram was popular for social interaction and content sharing, and Telegram for educational content and file sharing.

Comparison between Chennai and Trichy

To compare the differences between the students from Chennai and Trichy with respect to digital communication practices, communication preferences, emotional expression and interpersonal relationship quality, an independent samples t-test was used.

Table 6. Independent Samples t-test Results

Variable	Chennai Mean $\pm$ SD	Trichy Mean $\pm$ SD	t-value	p-value
Social Media Usage	4.32 $\pm$ 0.64	3.98 $\pm$ 0.71	4.28	0.001*
Communication Preference	4.18 $\pm$ 0.67	3.84 $\pm$ 0.73	3.95	0.001*
Emotional Expression	4.10 $\pm$ 0.71	3.79 $\pm$ 0.68	3.62	0.002*
Relationship Quality	4.15 $\pm$ 0.65	3.91 $\pm$ 0.72	2.84	0.005*

Significant at $p < 0.05$

The findings reveal that there are statistically significant differences between students of Chennai and Trichy from all the variables studied. The students from Chennai reported higher scores on social media usage, preference of communication through digital media, quality of emotional expression and interpersonal communication

relationship whereas students from Trichy reported lower scores on these measures.

Correlation Analysis

The relationship between social media uses, emotional expression, communication preference and quality of interpersonal relations were explored using Pearson correlation analysis.

Table 7. Pearson Correlation Matrix

Variables	1	2	3	4
1. Social Media Use	1			
2. Emotional Expression	0.541**	1		
3. Communication Preference	0.482**	0.517**	1	
4. Relationship Quality	0.624**	0.673**	0.581**	1

$p < 0.01$

The correlation results indicated that there were significant positive correlation between all the study variables. Emotional expression was found to be most related to interpersonal relationship quality ($r = 0.673$, $p < 0.01$), followed by social media use ($r = 0.624$, $p < 0.01$) and then communication style ($r = 0.581$, $p < 0.01$). The results indicate that the higher the college students' involvement in digital communication, the higher their interpersonal relationship quality is.

Regression Analysis

Table 8. Multiple Regression Analysis Predicting Relationship Quality

Predictor Variable	β	95% Confidence Interval	Cohen's f^2
Digital Communication	0.318	0.22–0.41	0.15
Communication Preference	0.254	0.14–0.36	0.11
Emotional Expression	0.396	0.29–0.51	0.24

Model Summary

R	R ²	Adjusted R ²	F-value
0.758	0.575	0.569	133.28

The largest effect size ($f^2 = 0.24$) was found for emotional expression, which is a moderate level of practical significance for interpersonal relationship quality. Digital communication practices had a small to moderate effect ($f^2 = 0.15$), and communication preference had a smaller, but significant effect ($f^2 = 0.11$). The confidence intervals excluded zero, which provided additional

evidence of statistical significance and strength of the observed relationships.

Hypothesis Testing

The hypotheses proposed for the study were tested by t-test, correlation and regression analysis.

Table 9. Summary of Hypothesis Testing

Hypothesis	Statement	Result
H1	Significant difference in digital communication patterns between Chennai and Trichy students	Supported
H2	Significant difference in communication preferences between Chennai and Trichy students	Supported
H3	Digital communication practices positively influence relationship quality	Supported
H4	Emotional expression positively influences relationship quality	Supported
H5	Digital communication practices, communication preferences, and emotional expression significantly predict relationship quality	Supported

All five hypotheses in the study are supported by the results. Students in Chennai and Trichy showed remarkable difference in the values of the variables relating to Digital Communication and interpersonal relationship quality showed significant influence.

DISCUSSION

Digital Communication Patterns among College Students

The result of the present study indicates that among digital communication platform, WhatsApp was the most popular platform among the students followed by Instagram and Telegram. The positive social media engagement reported by respondents suggests the increasing presence of digital

technologies in students' daily learning and life. The results corroborate those of who revealed that social networking sites have been critical communication channels among students, leading to the sharing of information, social interaction and academic collaboration. Likewise, concluded that social networking sites meet users' requirements of communication, entertainment and socialization, which allows them to play an important role in their communication practices. This is because digital communication platforms are accessible, convenient, and can enable ongoing communication between students. Students can maintain their social connectivity and, at the same time, be academically connected through the WhatsApp groups, discussions and social networking apps. Based on the results, it could be concluded that

digital communication becomes a part of a student's life and it impacts on interpersonal communication and education as well.

Communication Preferences among Chennai and Trichy Students

The students were segmented into two groups Chennai students and Tricky students. The students were divided into 2 groups namely Chennai Students and Tricky Students. There was a significant difference observed in the students' preference in the communication domain of the comparative study conducted between Chennai and Trichy. The Chennai students were found to have more preference towards digital communication than those of Trichy. The difference could be attributed to aspects of technology exposure, urban infrastructure, Internet connectivity and communication culture. The city of Chennai is a metropolitan city, thus offering more opportunities for access to the advanced digital technologies and communication platforms. Students in metropolitan areas will have a higher percentage that will adopt and use new communication technologies to integrate them into their life. The city of Trichy, on the other hand, has seen and experienced a lot of technological development and face-to-face communication might still be having a relatively greater impact on interpersonal communication. Cultural norms and family structure can influence students' communications preferences from across the globe. The results indicated that geographical context still plays an important role in the communication behavior. The differences observed highlight the need to consider differences in socio-culture and technology in the analysis of digital communication practices of young adults.

Digital Communication and Interpersonal Relationship Quality

The results indicated that there is a significant positive correlation between the digital communication practices and interpersonal relationship quality. Other findings related to the levels of digital communication engagement, which were also correlated to interpersonal relations (trust, emotional closeness and relationship maintenance), showing positive relationships between the two. The findings of these results support the assumptions of Social Information Processing Theory (SIPT) that meaningful interpersonal relationship can be developed without physical contact. Social Information Processing Theory suggests that people slowly and systematically swap social information over digital

communications, enabling relationships to build up as time goes on. The current results suggest that digital communication platforms offer avenues for ongoing relationships for college students and have the capacity to help them form and maintain relationships. The results are also consistent with the Social Presence Theory, which posits the importance of perceived social presence in communication situations. Interpersonal relationships are reinforced through people's experience of a feeling of social presence on social networking, instant messaging, and the multimedia communication channels of the Internet. In this study, a positive correlation between digital communication and the state of a relationship suggests that the use of the digital communication cannot be solely regarded as an alternative of other means of communication. Instead, digital communication can be an additional tool for communication and can add value in the development of relationships if appropriately used.

Emotional Expression and Relationship Quality

The authors found that emotional expression was highly positively correlated with quality of interpersonal relationship to be one of the most important findings from this study. Emotional expression was the highest correlate and predictor of relationship quality among all of the variables studied. This finding highlights the importance of emotional relationships in the development of effective inter-personal relationships in online settings. With modern communication platforms, there are plenty of tools to help people convey emotion—such as an emoji, sticker, GIF, voice note, photo and video message. These features are useful for users to express their emotions, intentions and personal experience to better communicate than just through text. Emojis and the use of pictograms can help to lessen the ambiguity of the message and also aid the understanding of the emotions between two parties in communication. Self-disclosure is also a very important aspect of the relationship between two people when done online, as it helps to build intimacy and trust. Children that express their emotions, thoughts, and experiences openly online may be better able to form deeper emotional bonds with peers, friends, and family members. Digital support of emotions can support interpersonal relationships and psychological health. Thus, emotional expression seems to be an important process that relates to the quality of the relationship by means of digital communication.

Predictors of Interpersonal Relationship Quality

The regression analysis revealed three variables – digital communication practices, communication preferences and emotional expression – predicted the quality of interpersonal relationships significantly. Of these variables, the most predictive was emotional expression, while the communication preference and digital communication practices were also predictive. The results indicate that the students who are able to use digital media well and express their emotions effectively in digital media are more likely to be able to have a good interpersonal relationship. These results can be examined from the point of view of Uses and Gratification Theory that states people seek communication tools to satisfy their social, emotional and information needs. Students will be likely to be more satisfied with their interpersonal relationships because of the use of digital communication tools for socialization, emotional support and to maintain relationships. Moreover, the results can be explained based on Media Richness Theory. Effective communication and relationship building is possible with rich media channels such as voice messages, video calls and multimedia communication. The aforementioned variables are important to predict the social interaction of modern college students, which shows that the digital communication technologies have already become key resources for modern college students' social interaction. These technologies can be used to improve social connection, emotional intimacy and relationship satisfaction when used effectively.

CONCLUSION

The current study aimed at finding out about the association between quality of interpersonal relationship and digital communication among the college students of Chennai and Trichy. The findings revealed that the students use popular communication platforms such as WhatsApp, Instagram and Telegram where WhatsApp was the most commonly used platform. The level of Engagement with Digital Communications, Communication Preference, expressing feelings through Digital Communication and Quality of the relationship to Digital Communication was found to be higher among students from Chennai as compared to students from Trichy with significant difference between both the regions. The study also revealed that the interrelationships of the three components – digital communication practices, emotional expression, communication preference and interpersonal relationship quality were high and positive. Emotional expression emerged as the most important of the relationship variables,

suggesting the importance of emotional communication in the digital spaces. The findings support the postulates of the Uses and Gratifications Theory, Social Information Processing Theory, Media Richness Theory and Social Presence Theory, and indicate that digital communication helps to maintain and initiate relationships. The study makes a significant contribution to the burgeoning literature in communication research and offers comparative evidence from two varied set-ups in the Indian context of Tamil Nadu. Practically speaking, the findings emphasize the importance of promoting healthy and balanced technology to promote positive inter-personal interaction and relationships with college students.

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