A STUDY ON THE USAGE BEHAVIOUR TOWARDS VIRTUAL MEETING APPLICATIONS IN PRE-DURING-POST PANDEMIC PERIOD IN INDIA

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Dedication

I hereby declare that the thesis entitled **" A STUDY ON THE USAGE BEHAVIOUR TOWARDS VIRTUAL MEETING APPLICATIONS IN THE PRE-DURING-POST PANDEMIC PERIOD IN INDIA "** submitted to SSBM, Geneva for the award of degree of Doctor of Business Administration, is my original research work. This thesis or any part thereof has not been submitted partially or fully for the fulfilment of any degree of discipline in any other University/Institution.

(Vigneshwar. K)

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(Vigneshwar. K)

ABSTRACT

A STUDY ON THE USAGE BEHAVIOUR TOWARDS VIRTUAL MEETING APPLICATIONS IN PRE-DURING-POST PANDEMIC PERIOD IN INDIA

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Purpose

This research aims to investigate the evolving usage patterns, perceptions, engagement, and post-usage behaviour of users towards virtual meeting apps in India across three distinct phases: pre-pandemic, during the pandemic, and post-pandemic. The study seeks to provide insights into how these factors change over time and their impact on user behaviour, with a focus on identifying key drivers of engagement and satisfaction.

Design /Methodology

Utilizing a longitudinal design, 600 respondents, were selected through purposive sampling. Data collection was conducted thrice across the three phases using a well-structured questionnaire. Statistical analysis, including descriptive techniques such as frequency and percentage analysis, mean analysis, and inferential techniques such as independent-samples t-test, one-way ANOVA, Pearson correlation, and multiple regression, were employed to examine relationships between variables over time.

Findings

Across the pre-pandemic, during-pandemic, and post-pandemic phases, convenience consistently emerged as a critical factor influencing user engagement, with significant correlations observed between convenience and engagement. During the pandemic, convenience exhibited an even more substantial impact on user engagement. Post-pandemic,

a shift was observed in user priorities, with perceived benefits becoming the primary driver of engagement. Additionally, convenience retained its significance in fostering positive post-usage behavior across all phases, indicating its enduring importance over time.

Conclusion:

This longitudinal study underscores the enduring significance of convenience in driving user engagement and post-usage behavior in virtual meeting apps, highlighting the need for developers to prioritize usability and accessibility. The shift towards perceived benefits post-pandemic suggests evolving user expectations, emphasizing the importance of developers aligning their offerings with changing user needs. Insights from this research provide actionable recommendations for developers and service providers to enhance user satisfaction and engagement, ensuring the continued success of virtual meeting apps in India. The longitudinal nature of the study also offers valuable insights into the product life cycle of virtual meeting apps, guiding developers in innovating and adapting their offerings to meet evolving user needs and market dynamics across different phases of adoption and maturity.

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INTRODUCTION

1.1 Introduction

Virtual Meeting Applications

According to the Oxford English Dictionary (2012), a "meeting" is "the act or an instance of assembling or coming together for social, business, or other purposes". It implies a meeting includes multiple individuals, the fact that its proceedings are synchronous, furthermore that it has an aim or an objective. Conversely, a virtual/online meeting is one that does not require participants to physically gather. The requirements for a virtual meeting are identical as those of a conventional meeting; nevertheless, it is explicitly acknowledged that some or all the attendees might not be present physically. The term "virtual meeting" comes from the phrase "synchronous communication mediated by ICT, making it possible for two or more geographically remote people to interact" (Arnfalk, 2016). Therefore, a virtual meeting is any online gathering of two or more individuals with the objective of exchanging ideas and thoughts. Participants can participate in the activity from anywhere (at home or in the park) if they have access to the internet via a computer or smartphone device, rather than engaging in face-to-face communication with another person.

Through screen sharing, audio conferencing, video conferencing, webinars, and other technologies, people in different places can participate in remote communication, collaborate, and exchange ideas in virtual meetings. Applications for virtual meetings provide a venue for these online get-togethers and enable user-to-user conversation via the internet.

The three most common forms of virtual meeting technologies are computer-mediated communication (CMC), videoconferencing (VC), and audio conferences (AC). The following table, which was compiled by Davis and Wainfan (2004), provides an overview of the distinctions in features.

Table 1.1

Characteristics of AC, VC and CMC (Source: Wainfan & Davis 2004)

Mode	Defining characteristics	Examples
Videoconferencing (VC).	Useful real-time images and voices of other participants; may include other shared images/text.	Group videoconferences in dedicated rooms; desktop videoconferencing.
Audio conferencing (AC).	Voice communication, but no useful real-time video images of other participants; may include other shared images, data and text.	Phone calls, conference calls or conference calls where people are also sharing views of images or documents.
Computer-mediated communication (CMC).	Text, images and other data received via computer, without effective real-time voice or video images of other participants.	E-mails, chat rooms, discussion boards, text messaging, instant messaging, shared databases, application-specific groupware.

Virtual meeting Platforms

Virtual meeting platforms consist of video applications and software that facilitates video conferencing, virtual meeting in addition to other utilities such as chat, responses, and screen sharing (Brubaker et al. 2012). Zoom, Webex, Google Meet, Lifesize, and Jami are all examples of platforms that are commonly used for conducting virtual meetings (Brubaker et al. 2012).

A brief description about this application is as follows:

Zoom: This video meeting/ conferencing technology has earned a stellar reputation for its intuitive user interface. Zoom users could invite others to a meeting simply by sharing a URL, allowing participants to join without needing a Zoom subscription. Clicking the hyperlink/URL directs members to "virtual meeting room" with their colleagues. Those with a registered Zoom account can use the unpaid version to schedule meetings with up to "**100 participants**". Zoom's numerous interactive add-ons, like breakout rooms, make it an go-to platform for virtual teams to hold meetings, games, and other activities.

Google Meet: Initially, G-Meet was developed as a platform for its corporate customers to utilise in virtual conference contexts. On the other hand, because of the meteoric rise in popularity of Zoom, Google chose to provide G Meet as a trustworthy alternative. G Meet has the capacity to accommodate get-togethers with up to 250 people, and it also provides handy extras like live captioning and anti-abuse measures. If each participant has a Google Account, G Meet is an excellent choice for your company if protecting sensitive information is one of your top concerns.

Skype: Skype was the first brand that consumers immediately recognised in connection with video conversations before it was purchased by Microsoft in 2011. However, Skype is no more the sole or leading preference for doing online meetings due to user concerns and Zoom's development, which ZDNet reported on. Because Skype is about to make a return with video conferencing, now is the ideal opportunity to rediscover the well-known programme and customise it with a charming ringtone. The software now provides meetings that may have up to 50 participants and can be accessed by a link that is automatically created. No downloads or registration are required.

Webex: Cisco Webex, was first created for use in business environments. Webex has been assisting companies in maintaining their connections for a long time thanks to its user-friendly controls and robust security. If an individual join up for the free plan offered by Webex, he/she will have the ability to organise virtual meetings or activity/ games with up to one hundred participants for an unlimited timeframe. This contrasts with Zoom, that limits meetings to forty-minutes when there are 3 or more participants. So, if customers decide to use Webex as their go-to virtual meeting platform, they will not need to fret about time constraints for upcoming online meetings.

Jitsi Meet: Jitsi Meet is a is open-source virtual meeting platform that also supports different customizations. There are no fees associated with using this virtual conference software, and you can invite as many people as you like to meetings. It is furthermore protected by robust encryption. Because of its adaptability, Jitsi Meet gives the team an almost infinite number of options for doing online conferences, virtual meetings, and other types of events.

Toasty: Toasty is a web-based platform for holding virtual meetings that gives meeting hosts the ability to actively engage their attendees, as well as to foster cooperation during online conferences and seminars. Activities like as icebreaker questions, discussion cards, and surveys are included right into the app for user convenience. It also has an interactive agenda for the meeting that the host sets up ahead of time so that everyone can comply alongside the schedule and sessions. One of the best ways to keep people interested in the event is to let them know what will happen and when. Toasty has its foundation on Jitsi and Amazon Web Services (AWS), which together offer connections that are trustworthy, secure, and easy to use.

Lifesize: The virtual conferencing software offered by Lifesize is an excellent solution for groups who are looking for high-quality 4K video, a wide variety of integrations, and a safe and secure environment. After registering for a free account, user will have the ability to host an infinite number of online meetings, each of which may include up to 25 participants. Lifesize is an easy-to-use alternative to Zoom in which meetings are organised via the usage of a shared link. since of its emphasis on high-definition video, Lifesize is ideal for doing remote team building exercises since it gives the impression that the members of the team are there in the same room as others.

Jami: The “peer-to-peer” and “end-to-end encryption” that is Jami’s calling card should satiate the requirements of even the most security-conscious members of an organisation. Because Jami’s architecture is distributed, data can move rapidly and securely between nodes without

going via any servers. This results in an enhanced video user-interface experience and uninterrupted connectivity. Although the platform's developers had organised virtual meetings only with a maximum of sixteen participants each time, users are welcome to test the product with bigger groups. The requirement is that the meeting be run from a device with a sizable amount of computing power and internet.

Talky: Talky is the least complicated online meeting platform/ product alternative; since it requires no installation. Rather, the website will provide a unique hyperlink that might be shared with the group. Talky's limited features—secure rooms and screen sharing—are comforting for less tech-savvy individuals. Talky is a great option for doing intimate virtual meetings or conference calls since it only permits a maximum of six participants in each session.

Whereby: Whereby provides exceptionally intimate collaborative work experiences with four-person meetings. There is no need for team members to install any additional software or register because it operates directly from the web browser. It is ideal for online tasks involving streaming video content, like group stretches with Yoga Norman, because users can even play YouTube videos.

Features of Virtual Meeting Applications

Virtual meeting applications offer a range of special features that make remote collaboration and communication more efficient and effective. Some of the most common special features of virtual meeting applications include:

- **Video conferencing**: Virtual meeting applications enable real-time video conferencing, allowing participants to see and hear each other from remote locations.
- **Screen sharing**: This feature allows participants to share their gadget/ device screen with others, making it easy to collaborate on documents or presentations.

- **Recording**: Many virtual meeting applications offer the ability to record meetings for future reference or sharing with others who were unable to attend.
- **Chat and messaging**: Participants can use chat or messaging features to communicate with each other during the meeting, without interrupting the speaker.
- **Whiteboarding**: Some virtual meeting applications offer whiteboarding features that enable participants to draw or write on a virtual whiteboard, facilitating collaboration and idea-sharing.
- **File sharing**: Participants can share files such as documents, images, and videos during the meeting, making it easy to collaborate on projects or review materials together.
- **Polls and surveys**: Virtual meeting applications often offer the ability to create and share polls or surveys to gather feedback from participants.
- **Virtual backgrounds**: Some virtual meeting applications offer the ability to use virtual backgrounds, allowing participants to hide their actual surroundings and create a more professional or personalized look for the meeting.

Overall, virtual meeting applications provide a range of features that make remote collaboration and communication more convenient and efficient, helping teams to work together effectively from anywhere in the world.

Growth of Digital Technology and its Adoption in Post-Pandemic Era

In modern history, the very existence of human race was threatened by an extremely devastating crisis named as “COVID-19” that spread across the countries in the year 2020 (Remko, 2020). This pandemic has caused unprecedented health and economic disruptions in several countries, resulted in devastating recession in terms of great financial loss, impaired majority of the economies and societies at large, and paralysed the world (Paul., Chowdhury, 2020; Linton., Vakil, 2020).

In mid-March 2020, the WHO declared the new coronavirus a “pandemic”, leading governments worldwide to implement lockdown measures. (Belhadi et al., 2021). This triggered a level of digital transformation that would typically take a decade to realise, forcing businesses to turn to information and communication technologies (ICT) and tools for managing their daily operations (OECD, 2021). Businesses have rushed to adopt digital technology in response to COVID-19 outbreak to prevent themselves from going out of business in the face of an unprecedented outbreak (Birhanu et al., 2022) state that the acceptance/ adoption of digital technology allowed companies to continue running remotely despite confined work environments and mobility restrictions imposed by public health regulations. Thus, this new circumstance has helped to pave the way for the adoption of digital solutions throughout a wide range of businesses and across society.

The widespread adoption of technology in different aspects of life has resulted in significant transformations in the way people interact with one another. One such potential technological development is the proliferation of usage of online virtual meeting applications (apps) by numerous reputable firms all over the world (Coldewey, 2020). These are pre-installed software programmes that come with every gadget that has a built-in camera, including a laptop or smartphones (Jinsen, 2020). Users may interact in real time with each other face-to-face with these applications. The market for video conferencing will continue to grow at a rate of 19% between 2020 and 2026, according to research published by the Market Study Report (2020). It is anticipated that the adoption of video calling applications would provide several advantages to consumers, such as the ability to engage with one another from a faraway location and a sense of social connectivity (Rounak Jain, 2020).

Owing to “cross-border contamination,” the corona pandemic compelled a lot of organisations reconsider the necessity of international travel. This led to a growing acceptance of the significance of virtual meetings and conferencing. In the post-pandemic era, people have

become so proficient with technology and accustomed with online networks that they are no longer impediments. The ability to save time, money, and resources is yet another advantage of participating in online conferences. In addition, because of the inclusive nature of virtual meetings, it is possible to bring in people from all over the world for activities that are held locally. Using virtual meetings, academic institutions, and healthcare organisations can expand their community engagement and international partnerships, as well as place their research on a worldwide scale.

1.2 Research Problem

Significant developments in terms of technical advancements, the internet, and telecommunication capabilities in recent decades have resulted in incredible transformations in the lives of people in different ways. There has been a drastic change in the working pattern of employees, transitioning significantly from the conventional mode of working of teams in organisations. Because of globalization and advancements in technology, the working styles of businesses have been no longer limited by the physical boundaries of their working environments. In this era of information age, it is necessary for businesses to ensure communication among the team members across different locations around the world seamlessly and uninterruptedly. Because of this, the importance of conducting team meetings and collaborative projects over virtual environment has increased. When a corporation uses virtual team meeting applications, it enables its employees to collaborate on projects regardless of location or the passage of time.

To respond appropriately to increasingly competitive markets, managers have the problem of developing organisations that are strategically flexible. Thankfully, the advent of the latest version of ICT has made it practical to construct robust new organisational structures that were not even conceivable just a decade ago. One of the most fascinating of these new forms, the

virtual team meeting applications (apps), is poised to help organisations becoming more flexible by giving the exceptional productivity of team-based designs in situations where cooperation would formerly have been impossible.

Throughout the world, individuals and companies have had to shift their conventional methods of performing their mundane tasks due to the COVID-19 pandemic. The virus advanced so swiftly that almost every state had implemented lockdown restrictions, that include prohibiting any sort of activity that involves people gathering and interacting.

Owing to national lockdowns and social conventions that discourage proximity, the pandemic unavoidably resulted in an increase in the use of technological devices/ gadgets. When working from home, most people have turned to resorting to the internet and the applications that rely on it for communication, engagement, and professional responsibilities. The expansion of digital technology has led to a shift in the business world towards work-from-home (WFH) and an increase in online learning for educational institutions.

The global pandemic has drastically altered the context of human interactions and learning. It paved for the adoption of personalised, productive, and collaborative virtual environment for interactions among team and offering education to students' community. The shift from the conventional in-person mode to an autonomous, technology-based mode has disrupted organisational practices and caused beneficial improvements to the dynamics of conventional businesses. Analysing the user behaviour in the online meeting applications has been an interesting area of research.

Furthermore, in exploring the transformative impact of virtual conferencing applications during the COVID-19 pandemic, there is a need to analyse their growth trajectory in alignment with the new product life cycle. The unprecedented surge in the adoption of these applications indicates a profound shift in consumer behaviour and organizational practices.

The new product life cycle graph offers a framework for understanding the various stages that these virtual conferencing applications have undergone since their inception. This includes the introduction phase, characterized by the initial launch and user awareness, the rapid growth observed during the pandemic, and potential signs of maturity as the market stabilizes.

Through an analysis of the product life cycle, scholars can investigate the factors which contributed to the quick adoption/acceptance of virtual conferencing applications, potential challenges encountered during its surge in demand, and strategies that producers have implemented to maintain and improve their market share. This investigation will not only provide a comprehensive understanding of the growth patterns but also shed light on the future trajectory and potential innovations in the realm of virtual communication technologies.

Incorporating the new product life cycle perspective into the research problem allows for a holistic analysis of the virtual conferencing app phenomenon, capturing its evolution from introduction to widespread adoption and potentially foreseeing future trends as these technologies become integral to the way people work, communicate, and collaborate.

1.3 Purpose of Research

This research work focuses on studying the consumer usage behaviour of respondents towards virtual meeting applications in India. The study specifically looks at how people used virtual meeting apps prior to, during, and post the pandemic, as well as how they perceived about multiple aspects of these applications. The study highlights the holistic view of users on different aspects of virtual meeting applications including Perceived Benefits, Convenience, Design Factors, Features, User Engagement, and their Post-Usage Behaviour.

To fulfil the study's purpose, the following six objectives were framed:

1. To study the Demographic Profile of Users and Usage Pattern of Virtual meeting Applications with respect to pre-during-post Pandemic Period in India.

2. To identify and analyse the Users' Perception on various aspects of the Virtual Meeting Applications across pre-during-post pandemic period in India.

3. To assess the Users' Engagement towards Online Meeting with respect to pre-during-post Pandemic Period in India.

4. To examine the post-usage behaviour of users towards Virtual Meeting Applications with respect to pre-during-post pandemic period in India.

5. To analyse the relationships among Users' Perception, Engagement and Post-usage behaviour towards Virtual Meeting Applications with respect to pre-during-post pandemic period in India.

6. To assess how users' perception impact their Engagement and their Post-usage behaviour pattern towards Virtual Meeting Applications with respect to pre-during-post pandemic period in India.

1.4 Significance of the Study:

Given all the benefits that this technology offers to its users, the corpus of data that is now available seems to suggest that further intended research is essential. According to Chanjaraspong (2017), for example, there is a dearth of study pertaining to the use of virtual meeting applications for interactions, learning and collaborations. In addition, Zhou (2017) highlighted in a medicinal/healthcare study that user acceptability of online virtual meeting applications is a potential topic of research. Businesses need to have a thorough understanding of the aspects, variables or the factors that dictate customer adoption and integration of diverse

technologies into their daily routines. Therefore, the importance is to analyse the myriads of variables which influence consumer/ user behaviour towards virtual meeting applications. Applications for virtual meetings have grown rapidly in the last several years and have taken over as the primary mode of communication. Video chat programmes, which are also referred to as video calling, conference calls, are widely utilised to facilitate interaction between individuals in real time, regardless of their whereabouts (Jinsen, 2020). Regardless of whether they are speaking with someone in a group or alone, these technologies allow users to both view and listen to them on a single screen. In addition, Neustaedter and Greenberg (2012) found that virtual meeting applications help people retain relationships and a sense of closeness despite the distance between them. Applications for video calling may be utilised in a variety of settings, including business and personal interactions. For instance, virtual meeting tools are used in online learning (Hsiao, K. L., 2012), employment (Zhou & Feng, 2017), and blended education (Khechine et al., 2014) in formal settings. For informal phone conversations with friends and family, people utilise the video calling functions in these applications (Brown & Greenfield, 2021). In addition, individuals utilise video calling applications in the context of social settings. Furthermore, family members and friends also utilise virtual meeting applications to form communities to celebrate special events, attend parties, and exchange experiences (Brubaker et al. 2012; Massimi., Neustaedter, 2014). Vanshika Malhotra (2020) claims that social distancing norms and concerns about the spread of COVID-19 are responsible for the sudden surge in popularity of video calling apps. In addition, the expansion and rise in popularity of several mobile video calling applications may be ascribed to the proliferation of smart phones, the advent of 4G networks, and the reduction in the cost of internet data plans (Sangeeta Tanwar, 2019; Nokia, MBIT index (2019). According to Jana et al. (2013), the proliferation of user-friendly video chat mobile programmes such as Whatsapp, Google Meet, and Facetime has led to an improvement in the quality of the experience of video

chatting and video calling. Applications that provide video conferencing have a huge potential for development in the years to come. The worldwide market for video conferencing is anticipated to expand at a rate of 19% between the years 2020 and 2026, as stated in Market Study Report (2020).

In the field of marketing, research on various uses for virtual meeting applications has garnered an impressive amount of interest. Numerous studies have examined the use of these apps in the fields of online education (Lakhal, 2013), wellness (Chudner et al., 2020), and outbound (Neustaedter, 2020). Many theoretical frameworks have been used to explain the customer acceptance and consumer usage behaviour of virtual meeting applications, such as the "Diffusion of Innovation Theory", the "Technology Acceptance Model" and the "Unified Theory of Acceptance and Usage of Technology (UTAUT)".

This study delves deeply into the analysis of Indian consumers' usage behaviour towards virtual meeting applications in India. The study highlights the holistic view of users on different aspects of virtual meeting applications including Perceived Benefits, Convenience, Design Factors, Features, User Engagement, and their Post-Usage Behaviour.

1.5 Research Purpose and Questions

This research work focuses on studying the consumer usage behaviour of respondents towards Virtual meeting applications in India. In particular, the research examines the usage pattern of Virtual meeting applications prior to, during and the post-pandemic period and their perception toward different aspects of virtual meeting applications. The study highlights the holistic view of users on different aspects of virtual meeting applications including Perceived Benefits, Convenience, Design Factors, Features, User Engagement, and their Post-Usage Behaviour.

To fulfil the study's objective, the following six research questions were framed:

1. What are the demographic profiles of users and the usage patterns of virtual meeting apps in India across the pandemic periods?
2. How do users perceive various aspects of virtual meeting apps in India, and how has this perception evolved across the pandemic periods?
3. What is the level of users' engagement towards online meetings through virtual meeting apps in India across the pandemic periods?
4. How does the post-usage behaviour of users towards virtual meeting apps change in India across the pandemic periods?
5. What are the relationships among users' perception, engagement, and post-usage behaviour towards virtual meeting apps in India across the pandemic periods?
6. How does users' perception of various aspects of virtual meeting apps impact their engagement and post-usage behaviour in India across the pandemic periods?

CHAPTER II:
REVIEW OF LITERATURE

2.1 Features of Online Applications

2.1.1 Pandemic Impact on Online Application Design and Functionality

The COVID-19 pandemic significantly affected how businesses and consumers engaged with online applications. According to Cambra-Fierro et al. (2022), while much research has been conducted on the subject, a comprehensive understanding of the pandemic's impact on service sectors, particularly in online environments, remains lacking. This research stresses the importance of systematizing the knowledge gained during the pandemic to better understand and navigate market changes, with practical implications for online application design and functionality.

Similarly, Hu (2022) highlighted how customer preferences for wearable smart masks during the pandemic led to innovative designs, illustrating how user-centric functionality can address new health concerns. This focus on design innovation is a recurring theme in pandemic-related research, which shows the necessity for adaptability in online tools.

2.1.2 Consumer Preferences and Shifts in Behaviour

Consumer behaviour towards online applications changed drastically during the pandemic. Szwajca (2022) noted that while Polish consumers were forced to adopt digital communication and service channels during lockdowns, their preferences for traditional modes of interaction remained largely unchanged post-pandemic. This contrasts with Mohammed et al. (2022), whose case study in the airline industry found that responses to the pandemic directly impacted passengers' decisions, indicating that in some sectors, consumer behaviour may have experienced a more permanent shift.

Ojo et al. (2022) observed that electronic wallets, driven by contactless interactions and health safety concerns, gained popularity during the pandemic. Government incentives and the desire to avoid health risks were critical motivators for adopting such digital tools. This indicates that safety concerns and convenience were paramount in the increased adoption of specific online services during the pandemic.

2.1.3 Digital Communication Tools and Service Channels

The pandemic also spurred the growth of alternative service channels, including second-hand fashion consumption (SFC). Kim and Kim (2022) used the Theory of Reasoned Action to explore how consumer motivations, such as long-term viability and cost-saving attributes, influenced SFC intentions during the pandemic. This shift towards sustainability in consumer behaviour reflects broader changes in how digital tools facilitated new forms of commerce.

Further, Dwivedi et al. (2022) applied the "Theory of Planned Behaviour" model to investigate consumer behavioural intentions toward sustainable lodging, showcasing how digital applications facilitated sustainable practices, particularly during periods of restricted physical movement. Their research emphasized how green trust and individual expectations influence behavioural intentions.

2.1.4 Online Shopping and Purchase Behaviour

The role of digital tools in influencing online shopping behaviour became more pronounced during the pandemic. Nguyen et al. (2021) highlighted how the pandemic accelerated digital service transformation in Vietnam's e-commerce sector, where consumer motivations evolved rapidly. This change is crucial for post-pandemic growth, as businesses now leverage digital tools to expand their outreach based on new consumer behaviours.

According to Soares et al. (2022), online applications were deemed to have a higher "perceived ease of use and purchase value" when there was a perceived risk of contracting COVID-19

when buying/shopping in person. This shows how pandemic-driven health concerns enhanced the utility of digital tools for many consumers, influencing their purchase intentions and online behaviours.

2.1.5 Service Innovation in Retail and Hospitality

The pandemic catalysed innovation in digital service delivery across various industries, particularly in retail and hospitality. Pilawa et al. (2022) emphasized how retailers adapted through service innovation to meet government-mandated safety regulations. These innovations were crucial in making physical storefronts more attractive during the pandemic, highlighting the need for flexibility and creative solutions in maintaining customer engagement.

Pantano et al. (2022) addressed the challenges faced by senior shoppers in traditional retail environments, where new technologies such as robots and self-service checkout lanes allowed for autonomous, safe shopping experiences. This shift towards tech-enabled solutions helped seniors feel more included, reflecting broader trends of inclusivity driven by digital innovations in retail.

2.1.6 AI and Automation in Consumer Interaction

The role of artificial intelligence (AI) and automation in online services gained traction during the pandemic. Giroux et al. (2022) examined how AI and self-service technologies are transforming the retail industry, changing how consumers behave and interact with these tools. Their research highlights the ethical concerns surrounding AI use, particularly as consumers perceive machines as less human, which affects moral behaviour.

Piehlmaier (2022) explored the relationship between AI-advice use and investor behaviour, finding that overconfidence, rather than risk tolerance, drives greater adoption of robo-

advisors. This insight is critical as AI continues to influence decision-making processes in digital services, underscoring the need for more research on how AI impacts consumer behaviour in online environments.

2.1.7 The Evolution of E-Commerce and Impulse Buying

The pandemic also had significant effects on e-commerce platforms and consumer purchasing behaviour. Agus et al. (2021) integrated constructs like digital promotion competence and supply chain capability to examine their influence on e-commerce platform performance during the pandemic. The findings suggest that while customer review ratings previously influenced platform performance, their impact diminished post-pandemic, highlighting the evolving nature of consumer priorities.

Moreover, Gulfraz et al. (2022) studied the psychological and functional aspects of online shopping experiences, particularly focusing on impulse buying behaviour. Their research highlights the role of emotional attachment in driving online purchases, with consumers exhibiting impulsive buying behaviours influenced by various online shopping platform features. This theme demonstrates how the pandemic heightened consumer reliance on digital platforms for instant gratification.

2.2 Features of Mobile Applications

2.2.1 Consumer Behaviour and Mobile Commerce Applications

Mobile commerce applications have significantly shaped consumer behaviour, particularly during and after the COVID-19 pandemic. Liu et al. (2022) examined how social commerce, integrated with mobile coupon promotions, influences consumer behaviour. They found that factors like situational product involvement (SPI) and perceived coupon value (PCV) played

key roles in consumer intentions to redeem coupons, showcasing how mobile apps are driving consumer interaction in the digital marketplace.

Similarly, Hewei (2022) explored how multimedia engagement on Mobile Short Video Apps (MSVA) affects consumer purchase intentions, leveraging the Stimulus-Organism-Response (SOR) paradigm. The study found that both immersive experience and perceived value positively impacted users' purchase intentions, underscoring the importance of engaging multimedia features in enhancing user interaction and driving purchases.

Kwon et al. (2022) extended this focus to the fitness sector, where smartphone fitness apps have gained prominence. They found that aspects like affordability, ease of use, privacy protection, and device compatibility were key satisfaction drivers for users, though elements like personal data disclosure and customer service saw lower satisfaction levels. This reflects how different design features can directly influence user retention and satisfaction.

2.2.2 User Engagement and Gamification in Mobile Apps

Gamification has emerged as a significant tool for increasing user engagement in mobile applications. Praseyaningrum et al. (2022) highlighted how game concepts are applied in non-gaming environments, such as banking, to boost user loyalty and system performance. This study shows that gamification factors like rewards and achievement mechanisms can foster user interaction and encourage continuous use of apps across diverse sectors.

In the context of sustainable food consumption, Haas et al. (2022) investigated the effectiveness of mobile applications like “MySusCof,” which incorporated hedonic, social, and gamification factors to engage users and encourage behaviour changes. This research underscores the functional significance of user experience in altering consumer behaviours through gamified elements, further validating the trend of gamification in mobile apps.

2.2.3 Design and Personalization of Mobile Applications

Personalization and app design significantly impact the success of mobile applications. Prabhu et al. (2022) studied the Indian food delivery market and found that design components such as easiness of use, adaptability, speed, and security were crucial factors influencing purchase behaviour. The study also found that features like push notifications, user feedback, and search options were essential for improving user satisfaction and driving continuous app usage. This highlights the importance of intuitive design and real-time interaction in mobile applications.

Shahid et al. (2022) extended this to the mobile banking sector, where customer experience (CX) was found to be positively influenced by trust, social impact, and convenience. However, customer service and CX were found to be unrelated, emphasizing that app design and personalization play a more significant role than traditional service elements in mobile environments.

Liu et al. (2022) studied the influence of the "**Unified Theory of Acceptance and Use of Technology (UTAUT)**" on shopping apps, identifying that factor like "***performance expectations, ease of use, and social influence"*** drove behavioural intention, particularly in older users. This suggests that personalized design and targeted features are essential for ensuring high levels of engagement across different age groups.

2.2.4 Mobile Applications in Health and Wellness

Mobile health and wellness applications saw increased adoption during the pandemic. Padaliya et al. (2022) found that smartphone applications for mental health and wellness were altering users' health-related behaviours in India. Their study emphasized accessibility and adaptability

as critical features driving the uptake of these apps, reflecting a growing shift toward preventative healthcare and holistic wellness supported by mobile technology.

Martínez Rodríguez et al. (2022) explored how smartphone apps aided in physical health improvements, such as blood pressure reduction and weight loss. Their findings suggest that apps providing daily reminders and tracking physical activity significantly improved health outcomes, showcasing the potential of mobile apps in promoting healthy lifestyles through behaviour tracking.

Rushan et al. (2022) further emphasized the role of flow experience and marketing strategy in sustaining users' intent to engage with e-services through mobile apps. Their study highlighted how well-designed interactive features encourage repeat usage, which is particularly relevant for mobile health and fitness apps aiming to maintain long-term user engagement.

2.2.5 Mobile App Adoption and Behavioural Factors

Adoption of mobile applications is driven by multiple behavioural factors. Chopdar et al. (2022) examined how impulsivity affects the adoption of mobile shopping apps, showing that features like personalization, mobility, and product diversity were critical in driving users' decisions to use additional apps. This demonstrates how emotional and psychological factors, alongside practical app features, influence app adoption and engagement.

Ba et al. (2022) studied consumer behaviour in the hotel booking sector, where mobile apps led to an increase in purchase frequency and higher overall revenue. Their findings indicated that after adopting hotel booking apps, price-sensitive customers were more likely to book more expensive options, suggesting that mobile apps not only influence consumer behaviour but also alter purchasing strategies.

2.2.6 Security, Trust, and Privacy Concerns

Trust and security are pivotal for mobile app adoption. Libaque Senz et al. (2021) investigated how Fair Information Practices and data collection strategies influence users' trust in mobile apps, particularly in sectors like finance and retail. The findings indicated that perceived risk and data control were critical in shaping behavioural intentions, with privacy concerns posing significant barriers to widespread adoption.

Gani et al. (2021) explored how trust factors, especially in online food delivery services (OFDS), impacted user behaviour during the pandemic. Their research shows that trust in both the app and the restaurant positively influenced continued use, highlighting the critical role of data security and trust in sustaining engagement with mobile applications.

2.3 The Behaviour of Consumers Post-COVID

2.3.1 Post-COVID Consumer Behaviour and Green Marketing

Pandemic brought dynamic shifts in consumer behaviour, particularly concerning environmental consciousness and green marketing. Sun et al. (2022) explored how digital marketing influences consumer decisions regarding environmentally friendly products. Their study extended the Theory of Planned Behaviour, comprehending factors influencing the post-pandemic green purchasing decisions in China, revealing that social media marketing, crisis awareness, and product knowledge positively impacted consumers' intentions to buy green products.

Ghosal, Prasad, and Gupta (2022) further analysed whether pandemic-induced green spending trends would continue post-pandemic. Their study examined consumer purchasing patterns at

the intersection of online shopping and green consumerism, identifying key factors such as product quality, eco-label pricing, and cultural preferences that influence pro-environmental behaviours. This suggests that digital platforms should promote environmentally friendly purchases to maintain the green marketing momentum.

2.3.2 The Shift Toward Digital and Online Shopping Post-COVID

The pandemic has accelerated the shift towards digital and online shopping, with significant behavioural implications for consumers. Jena (2022) examined the Indian retail sector's adoption of mobile platforms for commercial transactions. Using Self-Determination Theory (SDT) and TPB, the study highlighted that factor like attitudes, perceived standards, and behavioural intentions significantly influenced the adoption of mobile payments post-pandemic. This illustrates the growing reliance on digital platforms in the retail environment, driven by the necessity of contactless transactions.

Similarly, KIEU (2022) investigated how perceived health risks and group mentality influenced post-pandemic online shopping behaviours. The study found that health concerns, particularly related to COVID-19, heightened consumers' online shopping intentions, although group mentality did not significantly impact this behaviour. The findings suggest that health-driven behaviours during the pandemic could result in sustained online shopping trends.

2.3.3 Consumer Behaviour in Specific Sectors Post-Pandemic

Certain sectors have witnessed unique consumer behaviour shifts in response to the pandemic. Jin et al. (2022) focused on the tourism industry's resilience, exploring how the pandemic affected consumer travel patterns. Short-term travellers showed a preference for destinations with high health and sanitation standards, reflecting heightened hygiene concerns in post-pandemic travel behaviour.

Sharma and Singh (2022) investigated the fitness industry, where virtual workout groups gained popularity during the pandemic. Their study revealed that participation in virtual fitness communities positively influenced team identification, satisfaction, and commitment to fitness goals. Post-pandemic, these virtual communities continue to play a crucial role in consumer loyalty and behaviour, as individuals maintain connections to both virtual and traditional workout groups.

2.3.4 Changes in Consumer Preferences and Attitudes Post-Pandemic

Consumer preferences and attitudes have evolved, particularly concerning sustainability and health-consciousness. Wolf and Lecat (2022) analysed how generational differences influenced wine consumption during the pandemic, finding that Baby Boomers, Millennials, Gen X, and Gen Z exhibited distinct purchasing patterns. The study highlighted the potential of generational market segmentation as a strategy for targeting consumer preferences in the post-pandemic environment.

Gupta et al. (2022) explored how psychological factors influenced long-term consumer behaviour changes post-pandemic. Their qualitative study identified that individuals who had negative experiences during the pandemic exhibited loss aversion and a shift toward online purchasing, while those with positive pandemic experiences demonstrated more sustainable and digital shopping behaviours.

2.3.5 Business Adaptation and Consumer Response Post-Pandemic

Businesses have had to adapt to the evolving consumer landscape, with varying responses to these changes. Orindaru et al. (2021) investigated the Romanian tourism sector's recovery strategies, revealing that consumers prioritized destinations with high hygiene standards. This study underscores the importance of businesses adapting to post-pandemic consumer expectations to regain customer trust.

Aslam et al. (2021) examined how mobile applications in retail influenced post-adoption behaviour, finding that features like perceived ubiquity, personalization, and entertainment significantly influenced app stickiness and user engagement. These findings indicate that businesses must enhance digital platforms with user-centric features to retain consumer interest in a post-pandemic world.

2.3.6 The Role of Health and Safety in Consumer Decision-Making Post-COVID

Health and safety concerns have become central to post-COVID consumer decision-making. Putri et al. (2021) analysed how social media platforms have influenced consumer behaviour during the pandemic. They found that informativeness played a critical role in shaping consumer intentions to purchase products online, particularly when health and safety information was prominently featured in marketing campaigns.

John and Thakur (2021) extended this to service firms, exploring how pandemic conditions forced firms to adapt their service offerings. Their research showed that customer acceptance of pandemic-related service changes, like contactless delivery, would determine whether these changes become permanent. This highlights the ongoing importance of health and safety considerations in post-pandemic consumer behaviour.

2.4 Understanding User Behaviour Towards Virtual Meeting Applications

The widespread adoption of virtual meeting applications during the COVID-19 pandemic has reshaped communication and collaboration practices. This study explores the evolving user behaviour towards these applications across three critical phases: pre-during and post-pandemic period. Grounded in key theoretical frameworks such as the “Technology Acceptance Model (TAM)”, the “Information Systems Success Model (ISSM)”, and the “Expectation-Confirmation Model (ECM)”, this section integrates the study's hypotheses

within the context of existing literature to demonstrate their relevance and connection to prior research.

2.4.1 Technology Acceptance and Perceived Usefulness

"Perceived usefulness" and "perceived ease of use" are two significant factors influencing "user acceptance" of new technologies, according to the Technology Acceptance Model (TAM) (Ma & Liu, 2005). In the context of virtual meeting applications, these factors shaped user behaviour during the pandemic. Research by Venkatesh et al. (2003) underscored the importance of app design, which directly affects perceived ease of use and technology adoption, particularly in scenarios where virtual tools became vital for communication and work.

H1: Perceptions of various aspects of virtual meeting applications differ significantly among users based on demographic characteristics and usage patterns across the pandemic periods.

2.4.2 User Engagement and the Impact of Demographic Factors

User engagement with virtual meeting applications evolved significantly as the pandemic advanced. DeLone and McLean's (1992) "Information Systems Success Model (ISSM)" underscores the value of "system quality" and "information quality" in influencing "user satisfaction and behaviour." Studies by Joseph et al. (2021) and Ayada & Hammad (2023) explored how features such as breakout rooms and language support increased user engagement, particularly in multilingual environments like India.

H2: Demographic factors and virtual meeting app usage significantly differ in terms of user engagement across the pandemic periods.

2.4.3 Post-Usage Behaviour and Continued Use of Virtual Meeting Applications

The Expectation-Confirmation Model (ECM), developed by Bhattacherjee (2001), suggests that continued use of technology is driven by the degree to which users' initial expectations are met or exceeded. The pandemic's forced shift to virtual platforms makes it essential to examine how users' experiences with virtual meeting applications during this time influenced their long-term engagement. Dindar et al. (2021) demonstrated that users with prior experience were more likely to continue engaging with these platforms post-pandemic.

H3: Post-usage behaviour towards virtual meeting applications differs significantly among users based on demographic characteristics and app usage patterns across the pandemic periods.

2.4.4 The Relationship Between Perceptions, Engagement, and Post-Usage Behaviour

As users' perceptions of virtual meeting applications evolved, their engagement and post-usage behaviours were also impacted. Research by Rout et al. (2022) illustrated that pandemic-induced behaviours, such as remote work and virtual collaboration, significantly shaped long-term engagement with virtual meeting tools. The connection between perceived benefits, convenience, app design, and special features was crucial in determining user engagement during the different phases of the pandemic.

H4: Users' perceptions, engagement, and post-usage behaviour towards virtual meeting applications are significantly related across the pandemic periods.

2.4.5 The Impact of User Perception on Engagement and Post-Usage Behaviour

Perceived benefits such as convenience, along with features like screen sharing, recording, virtual backgrounds, and user-friendly design, were critical in sustaining user engagement during the pandemic (Hsu & Chang, 2013). The study by Ayada & Hammad (2023) emphasized

the role of intuitive UX design in encouraging continuous usage of virtual meeting applications during the pandemic, where remote collaboration became the norm.

H5: Users' perceptions of various aspects of virtual meeting applications have a significant impact on engagement towards online meetings across the pandemic periods.

Post-usage behaviour, such as users' likelihood to continue using or recommending virtual meeting applications, is also influenced by their perceptions of app design and functionality. According to the Expectation-Confirmation Model (ECM), users who had their expectations met during the pandemic are more likely to continue engaging with these platforms post-pandemic.

H6: Users' perceptions of various aspects of virtual meeting applications have a significant impact on post-usage behaviour towards virtual meeting applications across the pandemic periods.

2.5 Summary of Literature Review

This literature review examines the various features, impacts, and user behaviours related to online and mobile applications, particularly focusing on the changes brought by the COVID-19 pandemic. The review is organized into distinct sections covering online applications, mobile applications, and consumer behaviour post-COVID.

The chapter begins by exploring the features of online applications and how the pandemic reshaped consumer and business engagement with digital tools. Key themes such as application design, consumer preferences, and digital communication tools are discussed, highlighting the critical role of adaptability and user-centric features during the pandemic. Studies emphasize the shift toward sustainable practices, such as second-hand fashion consumption and sustainable lodging, facilitated by digital applications.

The next section delves into the features of mobile applications, focusing on consumer behaviour, engagement, and design personalization. The review highlights how mobile applications, particularly in sectors like fitness, health, and commerce, drove user interaction during the pandemic. The role of gamification, user experience, and privacy concerns in shaping app adoption and engagement is also examined.

The chapter further discusses the behaviour of consumers post-COVID, emphasizing the shift toward green marketing, digital shopping, and safety concerns. The review identifies long-term behavioural changes brought by the pandemic, such as an increased focus on health-consciousness, sustainability, and online shopping. It also explores how businesses, particularly in sectors like tourism and retail, adapted to these evolving consumer preferences.

The final section examines user behaviour towards virtual meeting applications, framed through key theories like the TAM and ECM. The review integrates hypotheses exploring how user perceptions, demographic factors, and engagement evolved across the pandemic periods.

In conclusion, the chapter presents a comprehensive review of how the pandemic reshaped online and mobile application usage, consumer behaviour, and business practices, providing a foundation for further research on digital engagement in a post-pandemic world.

CHAPTER III:
METHODOLOGY

3.1 Overview of the Research Problem

Technological advancements, in recent years, especially in the realm of the internet and telecommunication capabilities, have revolutionized how people work and interact. Traditional modes of team collaboration within organizations have undergone significant transformations, thanks to globalization and technological progress. Businesses are no longer constrained by physical boundaries, enabling seamless communication and collaboration among team members across different locations worldwide. Consequently, the importance of virtual team meetings and collaborative projects surged, allowing employees to work together irrespective of geographical barriers and time zones.

This trend was further exacerbated by the COVID-19 pandemic, which spurred people and organizations to adopt digital communication technologies and remote work practices globally. With social distancing measures and lockdowns in place, reliance on digital technologies skyrocketed, with remote work becoming the new norm. This paradigm shift from traditional face-to-face interactions to technology-driven collaboration has reshaped organizational processes and introduced significant changes to conventional business dynamics.

Amidst these transformative changes, understanding user behaviour in virtual meeting applications has emerged as a compelling area of research. Previous studies have highlighted various factors influencing user engagement and satisfaction with virtual meeting platforms (Smith et al., 2020; Jones & Patel, 2021). However, there are still gaps in the literature that currently exists. For instance, there are not many longitudinal research studies that monitor

user behaviour throughout the pandemic, and there has not been much research done on how cultural or contextual factors affect users' perceptions and preferences (Chen et al., 2020; Wang & Lee, 2021).

Thus, while previous research provides valuable insights into the usage patterns and user experiences with virtual meeting applications, there is still a need for more comprehensive studies that delve deeper into the nuanced dynamics of user behaviour in different socio-cultural contexts and across evolving phases of the pandemic. Addressing these limitations will enhance our understanding of the evolving role of virtual meeting applications in facilitating remote work and collaboration in the post-pandemic era.

3.2 Operationalization of Theoretical Constructs

3.2.1 Hypothesis

“A research hypothesis is a specific, clear, and testable proposition or predictive statement about the possible outcome of a scientific research study based on a particular property of a population, such as presumed differences between groups on a particular variable or relationships between variables” (Kalaian & Kasim,2008). Formulating hypotheses is a critical step in preparing a scholarly research investigation. These hypotheses often guide the research methodology and design. In quantitative research, the investigator typically develops one or more hypotheses with an a priori expectation of the study's outcomes before conducting the investigation.

The following hypotheses have been laid out in this study considering its objectives and research questions:

HI: Perceptions of various aspects of virtual meeting applications differ significantly among users based on demographic characteristics and usage patterns across the pandemic periods.

H2: Demographic factors and virtual meeting apps usage significantly differ in terms of user engagement across the pandemic periods.

H3: Post-usage behaviour towards virtual meeting applications differs significantly among users based on demographic characteristics and app usage patterns across the pandemic periods.

H4: Users' perceptions, engagement, and post-usage behaviour towards virtual meeting applications are significantly related across the pandemic periods.

H5: Users' Perception on the various aspects of Virtual Meeting Applications has a significant impact on Engagement towards Online Meeting across the pandemic periods.

H6: Users' Perception on the various aspects of Virtual Meeting Applications has a significant impact on post-usage behaviour towards Virtual Meeting Applications across the pandemic periods.

3.3 Research Purpose and Questions

The study focuses on studying the consumer usage behaviour of respondents towards Virtual meeting applications in India. In particular, the research examines the usage pattern of Virtual meeting applications across the three phases of pandemic period and their perception toward different aspects of virtual meeting applications. The study highlights the holistic view of users on different aspects of virtual meeting applications including Perceived Benefits, Convenience, Design Factors, Features, User Engagement, and their Post-Usage Behaviour.

1. What are the demographic profiles of users and the usage patterns of virtual meeting apps in India during the pre-during-post pandemic periods?

2. How do users perceive various aspects of virtual meeting apps in India, and how has this perception evolved over the pre-during-post pandemic periods?

3. What is the level of users' engagement towards online meetings through virtual meeting apps in India during the pre-during-post pandemic periods?

4. How does the post-usage behaviour of users towards virtual meeting apps change in India across the pandemic periods?

5. What are the relationships among users' perception, engagement, and post-usage behaviour towards virtual meeting apps in India during the pre-during-post pandemic periods?

6. How does users' perception of various aspects of virtual meeting apps impact their engagement and post-usage behaviour in India across the pandemic periods?

3.4 Research Design

3.4.1 Defining Variable

Descriptive research often involves the use of multiple variables, which can be analysed to identify patterns, trends, and relationships between different factors. Researchers may develop an increased understanding of the phenomenon they are studying by identifying factors that are pertinent to the research issue.

Any element of a study that can be quantified and analysed is referred to as a variable in descriptive research. Variables can be categorized as independent or dependent and as quantitative or qualitative.

The variables that the researcher manipulates or controls are known as independent variables. These variables are frequently employed in hypothesis testing and relationship explanations involving two or more variables. Conversely, variables that are impacted by modifications in the independent variables are known as dependent variables. These factors are frequently the research study's conclusion or result. By altering “independent variable” and measuring “dependent variable,” researchers can examine the relationship between them. Among the independent variables considered in this study were:

- Gender
- Age
- Qualification and
- Marital Status

A predictor variable in descriptive research is one that is employed to forecast as well explain the result or value of another variable. This type of independent variable is assumed to have an impact on the dependent variable of interest. In statistical analyses, predictor variables are often used to determine the direction and strength of the relationship between the “predictor” and “outcome” variables. Predictor Variable used in this study included User Perception on the various aspects of Virtual Meeting Applications. User Perception was measured using four factors namely:

- Perceived Benefits
- Convenience
- App. Design
- Special Features

Finally, User Engagement towards Online Meeting through Virtual Meeting Applications and Post-Usage Behaviour towards Online Meeting though Virtual Meeting Applications were used

as dependent variable. Thus, the study measures the impact of User Perspectives on the various aspects (Perceived Benefits, Convenience, App. Design, Special Features) of virtual meeting applications on User Engagement and Post User Behaviour.

a. Perceived Benefits

The subjective assessment of the prospective benefits or gains that a person feels they can achieve by partaking in a specific action or activity is known as perceived benefits. It is a notion of what one hopes to obtain or accomplish by acting in a particular way or making a particular choice. Perceived benefit in this study focuses on quantifying the advantages of using virtual meeting applications.

b. Convenience

The extent whereby an innovative technology enables things easier to use, quick to adapt and follow, and easy to use, access, etc. is referred to as convenience. Int this study, convenience focusses on the measurement of the level of comfort and simplicity associated with using virtual meeting applications for learning, official team meetings, etc.

c. App Design

Application design features refer to the various elements or characteristics that are intentionally incorporated into the design of a virtual meeting software applications in order to enhance its functionality, usability, and user experience.

d. Special Feature

Virtual meeting applications offer a range of special features that make remote collaboration and communication more efficient and effective. Some of the special features include Virtual conferencing, Screen sharing, Recording, Chat and Messaging, Whiteboarding, Filesharing, Polls and Surveys, Virtual backgrounds and performing Simulations etc.

e. User Engagement

User engagement is described as the user's perspective of the experience with a particular application, which emphasizes the positive features of virtual meeting applications in the context of the desire to use it continually and for an extended period (Lubis et al. 2019).

f. Post-usage Behaviour

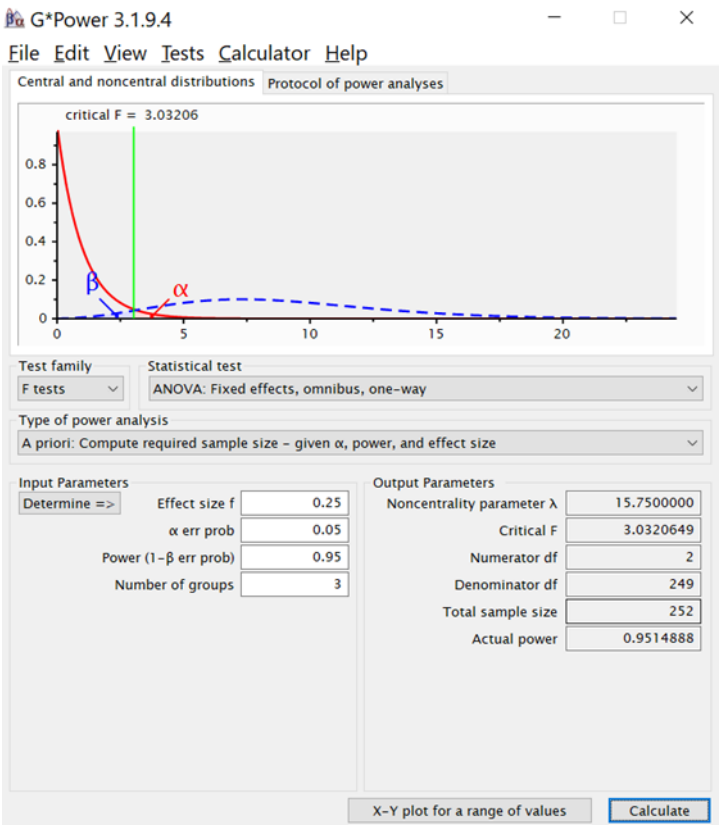
Post-usage behaviour refers to the actions or behaviours of users after they have used a virtual meeting app. It involves the analysis of the user's interactions with the application, as well as their feedback, reviews, and overall satisfaction with the application.

3.5 Population and Sample Size

The selection of a willing sample of participants is an essential step in any research investigation. The word “population” describes all the people who fit a certain set of requirements or traits. It is impossible to include every unit in a population in study to draw a relevant result. In addition, population sizes are frequently so high that studying all the units would not only be costly, but also tedious and time-consuming. A “sample” is a tiny representation of a bigger group (population). Often, the sample represents a subset of the broader total (population).

The investigation utilized “**G*Power software**” to calculate the necessary sample size, and the results are presented below

*Figure 3.5 Minimum Sample Size Calculation Using G*Power Software*



Based on three groups (Before, Pandemic, and following the pandemic) and an effect magnitude of **0.25**, **alpha score of 0.05**, and **power: (1-beta) value of 0.95**, the required sample size was calculated as 252 using the **G*Power Analysis**. The sample size should be at least twice as large as the required size of **252** to guarantee statistical correctness, reliability, validity, and **Type I and Type II error**. Therefore, the study finalized a sample size of 600. The larger sample size is thought to guarantee the reliability of the results.

3.6 Participant Selection

Researchers commonly employ two sampling methods: “nonprobability sampling” and “probability sampling.” Probability sampling allows researchers to assess the likelihood of including a participant or element in the sample, while nonprobability sampling lacks this probabilistic assessment. When researchers aim to generalize findings from the sample to the

entire population, probability sampling proves particularly valuable and accurate. Purposive sampling approach was used, which is a non-probability technique. This method involved selecting participants based on specific criteria, rather than giving each member of the population an equal opportunity to be included, as is characteristic of random sampling. It is sometimes referred to as judgmental sampling or selective sampling. Using purposeful sampling, participants are chosen based on predetermined criteria, the researcher's skill, and the study's objectives (Kothari, 2004). The volunteers who are most likely to offer the data required to address the study issue are carefully chosen by the researcher. In studies when the goal is to fully comprehend a certain phenomenon, purposeful sampling is frequently employed (Kothari, 2004). The participants were selected based on their expertise, experiences, or unique characteristics relevant to the research topic.

3.7 Instrumentation

The study collected data through a structured questionnaire designed by the researcher. This questionnaire was built by a comprehensive analysis of existing literature on technology use in virtual environments for human interactions, as well as advancements in online meeting application technologies.

The questionnaire included four sections as detailed below:

Section 1: Demographic Profile of the Users

Section 2: Usage Pattern of Virtual Meeting Applications

Section 3: Users' Perception on the Various Aspects of Virtual Meeting Applications (Pre-During-Post-Pandemic Period)

Section 4: Participants' Engagement

Section 5: Post-Usage Behaviour

A brief description about the content of each section in the questionnaire is given below:

- The section "Demographic Profile of the Users" measured personal details of the participants like Name, Gender, Age, Qualification, marital Status.
- The section "Usage Pattern of Virtual Meeting Applications" included seven items to measure the application and usage of virtual meeting applications by the respondents.
- The section "Users' Perception on the Various Aspects of Virtual Meeting Applications (Pre-During-Post Pandemic Period)" has 20 items designed to measure the four dimensions of perceptions toward the virtual meeting applications like Perceived Benefits, Convenience, App. Design and Special Features
- The section "Participants' Engagement" was measured using five items to study the participants' engagement towards online meeting through virtual meeting applications.
- The section "Post-Usage Behaviour" was designed using five items to measure the post-usage behaviour toward online meeting through virtual meeting applications.

3.8 Measurement Validity and Reliability

The current study examines user engagement, perceived ease of use, and post-usage behaviour toward virtual meeting applications, using established measurement scales from previous studies. This section discusses the sources of the measurement scales, as well as their reliability and validity.

3.8.1 Sources of Measurement Scales

The measurement scales applied in this research were derived from well-established models found in existing literature.:

- The “User Engagement Scale (UES)” created by O'Brien & Toms (2010), which has been extensively utilised in user experience and technology acceptance research, served as the model for the user engagement scale.
- The “perceived ease of use” and “perceived usefulness scales” were derived from “Technology Acceptance Model (TAM).” These scales are extensively validated in numerous studies exploring technology acceptance in various domains (Venkatesh & Bala, 2008; King & He, 2006).
- The post-usage behaviour scale was adapted from Bhattacherjee’s (2001) Expectation-Confirmation Model (ECM), which examines the sustained use of technology based on users’ satisfaction and confirmation of expectations.

3.8.2 Reliability of Measures

Cronbach's alpha, a widely recognized metric for assessing internal consistency, was used to evaluate the reliability of the constructs:

- User engagement: Cronbach’s alpha = 0.81, based on the work of O’Brien & Toms (2010).
- Perceived ease of use: Cronbach’s alpha = 0.87, reflecting findings from TAM studies (Davis, 1989; Venkatesh & Davis, 2000).
- Post-usage behaviour: Cronbach’s alpha = 0.83, consistent with Bhattacherjee’s (2001) model of post-adoption behaviour.

These reliability coefficients exceed the acceptable threshold of 0.70, indicating good internal consistency for all constructs (Nunnally, 1978).

3.8.3. Validity

In this study, validity of the measurement scale has been ensured through the careful adoption of established scales that have been previously tested and validated in research. For instance,

the items used to measure constructs like user engagement, perceived ease of use, and post-usage behaviour were drawn from foundational models in the field of technology acceptance. The "Technology Acceptance Model (TAM)" by Davis (1989) provided the basis for measuring "perceived ease of use" and "perceived usefulness", while Bhattacherjee's (2001) "Expectation-Confirmation Model (ECM)" was used to develop items related to "post-usage behaviour". The selection of these scales ensured that the measurement instruments were theoretically grounded and had a history of successful application in similar contexts.

To further validate the content of these scales, an expert review process was conducted. Experts in the fields of technology adoption, user experience, and digital communication were asked to assess the relevance, clarity, and comprehensiveness of the items used. This involved checking the extent to which each item reflected the construct it was intended to measure. For example, items measuring user engagement were assessed for their ability to capture the depth and quality of a user's interaction with virtual meeting applications, while items related to "perceived ease of use" were evaluated to ensure they adequately addressed both the simplicity of using the application and the ease of task performance. The experts also reviewed the wording of the items to ensure clarity and appropriateness, adjusting where necessary to avoid ambiguity. Additionally, the experts examined whether the items comprehensively covered all relevant dimensions of the constructs, ensuring that nothing critical was omitted.

Following the expert assessment, a small sample pilot test was carried out to find any possible shortcomings with the questionnaire. This pilot test allowed for the collection of feedback on the clarity and functionality of the items. Any issues that arose, such as confusing or redundant items, were addressed before finalizing the scales. The feedback from this process further contributed to enhancing the content validity of the measurement tools, ensuring that they accurately reflected the intended user behaviours and perceptions in the context of virtual meeting applications across the pandemic periods. By going through this rigorous process of

adopting, reviewing, and testing the scales, the study ensured that the measurement instruments were both relevant and comprehensive, strengthening the overall validity of the study's findings.

3.9 Data Collection Procedures

This study adopted a comprehensive data collection strategy, utilizing both primary and secondary data to achieve a well-rounded understanding of user behaviour towards virtual meeting applications across three pandemic periods. The integration of both data types allowed for a multi-faceted analysis, ensuring depth in addressing the research questions.

For primary data, the study utilized a structured survey designed to capture detailed responses regarding user behaviour and perceptions toward virtual meeting applications. The questionnaire was distributed across diverse demographic groups, industries, and sectors in India to ensure comprehensive coverage of the target population. Respondents were asked to provide insights on dimensions, including "perceived ease of use, user engagement, perceived usefulness, and post-usage behaviour." The survey included granular questions that captured specific data points, such as frequency of use, preferred features of virtual meeting applications (e.g., screen sharing, breakout rooms), and changes in usage behaviour over time (pre-pandemic vs. post-pandemic). This primary data was collected over a period of six months, from January to June 2023, ensuring that responses reflected the evolving usage patterns throughout the different phases of the pandemic.

The primary data collection strategy involved both online and offline channels to maximize reach and participation. Respondents were recruited through professional networks, academic institutions, and social media platforms. The data collection tools were designed to ensure ease of access and response, while also incorporating validation checks to improve the accuracy of

the collected data. A total of 600 valid responses were analysed, providing rich and detailed data on individual user experiences with virtual meeting applications.

In addition to primary data, this study also relied on secondary data sources to contextualize and validate the findings. The secondary data included scholarly articles, industry reports, and publicly available data from reputable online resources. Specifically, this data was collected from sources such as market research firms (e.g., Gartner, Statista), academic databases (e.g., Scopus, Google Scholar), and relevant industry reports (e.g., Deloitte's report on technology adoption in India). The period for the secondary data collection spanned from 2019 to 2023, covering the entire duration of the COVID-19 pandemic, and allowing for a longitudinal view of how the use of virtual meeting applications evolved over time. This included trends in digital communication, remote work adoption, and the integration of virtual meeting tools across various sectors.

The selection criteria for secondary data were guided by the relevance of the data to the research objectives, the credibility and authority of the sources, and the timeliness of the information. To ascertain the reliability and applicability of the secondary data used, only peer-reviewed journal publications, industry-leading studies, and reliable databases were taken into consideration. Key focus areas for secondary data included the growth of virtual meeting applications, consumer behaviour shifts, and technological advancements that influenced the adoption of these platforms.

To combine primary and secondary data, the study employed a comparative and integrative analysis approach. First, the primary data collected through the survey was analysed to identify key trends, patterns, and relationships related to user behaviour and technology acceptance. Next, these findings were cross-referenced with the insights gained from secondary data to validate the results and ensure consistency with broader trends in the literature. For example,

insights from primary data on the increased reliance on virtual meeting applications during the pandemic were compared with industry reports documenting the rise in digital communication tools during this period. The comparison helped identify gaps, confirm certain behaviours, and highlight emerging trends not previously captured in secondary data sources.

In terms of granular data points, the primary data captured specifics such as the frequency of using virtual meeting applications per week, the average duration of meetings, the types of virtual features most frequently used (e.g., video conferencing, screen sharing, file sharing), and the extent to which users found these features beneficial. Additionally, data on user satisfaction, "perceived ease of use", and "intentions to continue" using virtual meeting applications post-pandemic were collected. This granular data allowed for detailed analysis of user preferences and their evolution over time, providing a nuanced understanding of the factors that drive sustained engagement with virtual meeting applications.

3.10 Data Analysis

Following collection, the data must be processed and analysed in compliance with the strategy that was established when the study plan was being developed. Researchers ought to employ a range of statistical methods to have an extensive understanding of the findings as they pertain to the objectives and hypotheses. To analyse the data for this study, six primary methodologies were selected, and SPSS version 20 was used for data processing. These methods of analysis are:

DESCRIPTIVE STATISTICAL ANALYSIS

- Frequency and Percentage Analysis (Uni-variate Analysis)
- Mean Analysis (Uni-variate Analysis)

INFERENTIAL STATISTICAL ANALYSIS

- Independent-samples t-test (Bi-variate Analysis)
- Multiple Regression (Multi-variate Analysis)
- One-way ANOVA (Bi-variate Analysis)
- Pearson Correlation (Bi-variate Analysis)

NULL VALUE AND CORRELATION VALUE IMPUTATION

In analysing the dataset for this study, we encountered instances of missing or NULL values that could potentially distort the findings. To address this, we employed a systematic approach for handling these NULL values. Initially, we identified the proportion of missing data within the dataset. “Mean imputation” was used for continuous variables and “mode imputation” for categorical variables to replace the NULL values when the percentage of missing data in a particular variable was low, say less than 5%. This technique minimises the possible bias brought about by missing entries while maintaining the integrity of the data. In cases where larger proportions of data were missing, we opted for more robust techniques like multiple imputation, which allows for the generation of several plausible datasets, with the results being pooled for analysis. This technique was essential for maintaining the validity of the analysis while accounting for the uncertainty caused by the missing values.

Furthermore, for correlation value imputation, we used the Expectation-Maximization (EM) algorithm to estimate missing correlation values. This method maximizes the likelihood function to estimate missing correlations based on observed data, ensuring that the missing values do not skew the relationship between variables. By utilizing these methods, we ensured that the missing data and correlation values were handled effectively, maintaining the overall integrity and reliability of the statistical analyses presented in the study.

3.11 Research Design Limitations

Although the objective is to provide insight into how virtual meeting applications are used in India, there are several limitations that should be considered. First, the reliance on self-report data from a specific sample of users may introduce sample bias, potentially overlooking the perspectives of less tech-savvy individuals or those with limited access to digital resources. Moreover, disparities in technology access and internet connectivity could further skew the findings, omitting crucial insights from marginalized communities. Additionally, the study may not fully account for the influence of organizational culture on virtual meeting application adoption and usage patterns, overlooking the impact of organizational policies and norms. Ethical considerations regarding data privacy and security in virtual meetings remain unexplored, potentially affecting user trust and engagement. Moreover, the longitudinal approach does not adequately address the long-term impacts of continuous virtual communication on productivity and well-being, even though it does capture short-term changes in user behaviour. The results could potentially be distorted by outside influences like amendments to laws or developments in technology. Finally, the validity and reliability of the results may be compromised by response biases and measurement mistakes introduced by the study's dependence on self-reported measures. To improve the study's applicability and contribute to a more sophisticated knowledge of virtual meeting application usage behaviour, these shortcomings must be addressed.

3.12 Conclusion

The methodology outlined in Chapter III provides a comprehensive framework for investigating the usage behaviour of virtual meeting applications in the Indian context, particularly across pre-during-post-pandemic periods. A mixed-methods approach is used in the study to deliver comprehensive comprehension of user perceptions, engagement, and post-usage behaviour for virtual meeting applications.

The formulation of research hypotheses, guided by established principles of hypothesis testing, sets a clear direction for empirical inquiry into the relationships between demographic and usage variables, user perceptions, engagement, and post-usage behaviour. These hypotheses underscore the importance of considering diverse factors, such as demographic profiles and usage patterns, in shaping users' experiences with virtual meeting applications across different phases of the pandemic.

Through purposive sampling, the study aims to select participants who possess relevant expertise, experiences, or characteristics pertinent to the research topic, ensuring the richness and depth of insights obtained. The sample size calculation, based on statistical power analysis, emphasizes the need for a robust dataset capable of yielding reliable and generalizable findings. Moreover, the inclusion of diverse demographic groups and industry sectors enhances the representativeness and validity of this research outcomes.

The formulation of a structured questionnaire, guided by an extensive review of existing literature and conceptual frameworks, facilitates the systematic collection of data on users' perceptions, engagement, and post-usage behaviour towards virtual meeting applications. The questionnaire's multi-section format, covering demographic profiles, usage patterns, perception dimensions, engagement, and post-usage behaviour, enables a comprehensive examination of the research constructs.

Data collection procedures, encompassing both primary and secondary sources, ensure a rigorous and triangulated approach to data acquisition. The study seeks to provide a comprehensive knowledge of virtual meeting application usage behaviour in the Indian setting by integrating insights from participant replies with current literature and industry sources.

The adoption of descriptive and inferential statistical analyses, facilitated by SPSS software, enables the systematic exploration of data patterns, relationships, and associations. By employing techniques such as frequency analysis, mean analysis, t-tests, ANOVA, correlation, and multiple regression, the study aims to uncover key drivers and determinants of user behaviour towards virtual meeting applications.

Despite the methodological rigor employed in this study, several limitations must be acknowledged. These include potential sample bias, limitations inherent in self-report data, disparities in technology access and internet connectivity, and the exclusion of organizational cultural influences. Research on the long-term implications of virtual communication on wellbeing and productivity remains still essential, as are ethical concerns about data security and confidentiality.

Finally, the methodology offers a strong foundation for analysing how virtual meeting apps are used in the Indian setting. This study intends to produce important insights that can guide strategic decision-making and product development activities in the field of virtual communication technologies by answering the research topics using a methodical and multi-method approach.

CHAPTER IV:
RESULTS

4.1 Research Question - One

What are the demographic profiles of the users and the usage patterns of virtual meeting apps in India across the pandemic periods?

4.1.1 Analysis of Demographic Profile of The Users

Objective 1

To study Demographic Profile of Users and Usage Pattern of Virtual Meeting Applications with respect to pre-during-post Pandemic Period in India.

I. Descriptive Analysis – Percentage Analysis

Table 4.1

The Demographic Profile of Users

(Sample Size = 600)

VARIABLES	OPTIONS	FREQUENCIES	(%)
Gender of the User	Male	332	55.30
	Female	268	44.70
Age of the Users	< 20 Years	162	27.00
	21 – 40 Years	333	55.50
	More than 40 Years	105	17.50
Qualification of the User	School / Diploma	195	32.50
	Under/Post-Graduation	339	56.50
	Professional	66	11.00
Marital Status of the User	Married	417	69.50
	Unmarried	183	30.50

Source: Primary Data

Inference

Details on the demographic profile of Indian users of virtual meeting applications prior to, during, and after the pandemic is shown in table 4.1.

Gender of the Users

In terms of Gender of the Users, a significant majority of them (332, 55.30%) are Male and 44.70% (268) of them are Female Users.

Age of the Users

In terms of age, 55.50% (333) of the users are between the 21–40-year-old age range. Of the total number of users, 27% (162) fall among the category "Up-to 20 Years," the remaining 17.50% (105) are under the age threshold of "more than 40 Years."

Qualification of the Users

56.50% (339) of the users meet the qualification requirements for undergrads / postgraduates. Of them, 32.50% (195) possess a higher education degree or diploma, while the other 11 percent (66) hold professional credentials.

Marital Status of the Users

Regarding the users' marital status, 417, or 69.50% of them are married, while 183, or 30.50%, are single.

4.1.2 Analysis of Usage Pattern of Virtual Meeting Applications

Table 4.2
Usage Pattern of Virtual Meeting Applications
(Sample Size = 600)

VARIABLES	OPTIONS	FREQUENCIES	(%)
Type of User Group	Employer – Employee	322	53.70
	Teacher – Student	156	26.00
	Resource Person – Learner	122	20.30
Domain of the Work/Study of the User	Science/Engineering	203	33.80
	Medicine	134	22.30
	Commerce/Management	146	24.30
	Arts/Others	117	19.50
Virtual Meeting App used most	Google Meet	414	69.00
	Zoom	186	31.00
Period (Years) of usage of Virtual Meeting App	Up-to 3 Years	288	48.00
	4 – 5 Years	93	15.50
	More than 5 Years	219	36.50
Access of Virtual Meeting App	Laptop	168	28.00
	Mobile Phone/Tab	327	54.50
	Desktop Computer	105	17.50
Frequency of Usage of Virtual Meeting App in a month (currently)	Up-to 5 times	75	12.50
	5 – 10 times	115	19.20
	11 – 20 times	200	33.30
	More than 20 times	210	35.00
Usage of Virtual Meeting App – Pre-Pandemic Period	Less	473	78.80
	Moderate	69	11.50
	More	58	9.70
Usage of Virtual Meeting App – During Pandemic Period	Less	55	9.20
	Moderate	101	16.80
	More	444	74.00
Usage of Virtual Meeting App – Post-Pandemic Period	Less	81	13.50
	Moderate	333	55.50
	More	186	31.00

Source: Primary Data

Inference

The table 4.2 provides the information relating to the Usage Pattern of Users with respect to Virtual Meeting Applications in the pre-during-post Pandemic Period in India.

Type of User Group

As regards to the Type of User Group, 53.70% (322) of the Users belong to 'Employer – Employee'. 26% (156) of the Users group belong to 'Teacher – Student' and remaining 20.30% (122) of the Users group belong to 'Resource Person – Learner'.

Domain of the Work/Study of the Users

In terms of Domain of the study of the Users, 33.80% (203) of the Users belong to 'Science / Engineering' followed by 'Commerce / Management' (24.30%, 146), 'Medicine' (22.30%, 134) and 'Arts/Others' (19.50%, 117).

Most Used Virtual Meeting App

As regards to the mostly using App for Virtual Meeting by the Users, Majority 69% (414) of them using "Google Meet" App and the remaining 31% (186) are using "Zoom" App for Virtual Meeting.

Period (Years) of Usage of Virtual Meeting App

With respect to the Years of Using of Virtual Meeting App by the Users, 48% (288) of the Users are using Virtual Meeting App for less than 3 years. 36.50% (219) of them are using the same for more than 5 years and the remaining 15.50% (93) of the Users are using the Virtual Meeting App for 4 to 5 years.

Access of Virtual Meeting App

In terms of Accessing the Virtual Meeting App, 54.50% (327) of them are accessing the Virtual Meeting App through mobile phone/Tab. 28% (168) of them access the same through Laptop and rest of them (105, 17.50%) access the same through desktop computer.

Current Frequency of Usage of Virtual Meeting App in a Month

As far as the Frequency of Usage of Virtual Meeting App (in a month), 35% (210) of the Users are using for more than 20 times in a month. 33.30% (200) of them are using 11 to 20 times in a month, 19.20% (115) of them are using the same for 5 to 10 times in a month and the remaining 12.50% (75) of the Users are using less than 5 times in a month.

Usage of Virtual Meeting App: Pre-Pandemic Period

Regarding Pre-Pandemic Period use of Virtual Meeting Apps, 78.80% (473) of Users Are "less" Users, 11.50% (69) Are "moderate" Users, and 9.70% (58) Are "high" Users of Virtual Meeting Applications.

Usage of Virtual Meeting App – During Pandemic Period

With respect to the Usage of Virtual Meeting Applications During the Pandemic Period, 74% (444) of the Users are 'high' users of Virtual Meeting Application. 16.80% (101) of them are 'moderate' users and 9.20% (55) of them are 'less' users of Virtual Meeting Applications during the Pandemic Period.

Usage of Virtual Meeting App – In the Post-Pandemic

Usage of Virtual Meeting Applications during Post-Pandemic, 55.50% (333) of the Users are 'Moderate' users of Virtual Meeting App, 31% (186) of the Users are 'high' users

and13.50% (81) of the users are ‘less’ users of Virtual Meeting Application in the Post-Pandemic Period.

4.2 Research Question Two

How do users perceive various aspects of virtual meeting apps in India, and how has this perception evolved over the pre-during-post pandemic periods?

Objective 2

To identify and analyse the Users’ Perception on various aspects of the Virtual Meeting Applications across pre-during-post pandemic period in India.

H_1: Perceptions of various aspects of virtual meeting applications differ significantly among users based on demographic characteristics and usage patterns across the pandemic periods.

4.2.1 Pre-Pandemic Period

Descriptive Statistical Analysis – Mean Analysis

Table 4.3

Users’ Perception on various aspects of Virtual Meeting Applications in the Pre-Pandemic Period - Descriptive Statistics

VARIABLES	N	Mean	SD
It functions effectively in every situation without any crashes or connectivity issues irrespective of the internet bandwidth.	600	3.41	1.202
It allows to join a meeting with multiple devices (phone, laptop and/or desktop computer, etc.) at once.	600	3.45	1.053
The cost of this meeting platform is reasonable when compared with benefits.	600	3.66	.726
It provides some storage on Google drive/Cloud to store recordings.	600	3.26	1.485

The audio and virtual streaming are encrypted which prevents unauthorized access to the data.	600	3.60	.981
PERCEIVED BENEFITS	**600**	**17.37**	**4.446**
It is easy to create, connect and communicate with large audience.	600	2.99	.901
It is simple to configure because no additional software installation is necessary on the desktop/phone.	600	3.21	.897
It is easy to mute and unmute the users as well as others.	600	3.05	.913
There is no time limit for personal use and can conduct unlimited number of meetings.	600	2.72	1.152
Making presentation and reporting are always convenient and it is easy to share screen to others.	600	3.13	.809
CONVENIENCE	**600**	**15.08**	**3.601**
The user Interface (UI) is simple to understand and easy to use.	600	2.49	.735
The UI is self-explanatory and does not require the need of any instructions or demo.	600	2.82	.830
The user interface is straightforward and attractive features.	600	2.66	.940
It provides flexibility to the users in customizing the user interface.	600	2.28	.856
The layout of the app is easily accessible and adjustable according to the convenient of the users.	600	2.56	.740
APP DESIGN	**600**	**12.81**	**2.674**
More number of participant capacity and adequate Length of group meeting (hours)	600	2.75	.664
Background filter and background noise cancellation	600	3.13	.871
Good security standards/Encryption	600	2.89	.820
Collaboration tools	600	2.59	1.055
Full integration with related applications	600	3.05	.770
SPECIAL FEATURES	**600**	**14.41**	**3.186**
Users' Perception on The Various Aspects of Virtual Meeting Applications - Pre-Pandemic Period	**600**	**59.68**	**12.888**

Source: Primary Data

Inference

Table 4.3 provides insights into users' perceptions of various aspects of virtual meeting applications in the "pre-pandemic" period in India. This shows that users had the highest perception of "Perceived Benefits" with a mean score (M) of 17.37, followed closely by "Convenience" with a mean score of 15.08. These aspects were rated significantly higher compared to others, indicating that users found virtual meeting applications particularly beneficial and convenient before the pandemic.

On the other hand, "App Design" and "Special Features" received lower mean scores of 12.81 and 14.41, respectively. This suggests that users were less satisfied with the design and special features of virtual meeting applications, pointing to potential areas for improvement.

Furthermore, the analysis reveals that the users' perceptions of most aspects were above average. The majority of the mean scores were above 3 out of 5 (75%), indicating a generally favorable view of virtual meeting applications. Specifically, the overall mean score of 59.68 translates to 59.68%, reflecting that users' perceptions were around 60%, which is above the average threshold. This overall positive perception highlights that, despite some shortcomings in design and features, virtual meeting applications were well-regarded by users in terms of benefits and convenience during the pre-pandemic period.

Inferential Statistical Analysis

Independent Sample "t" Test

Gender – Users' Perception on the Various Aspects of Virtual Meeting Applications in The Pre-Pandemic Period

H_{1a}: In the pre-pandemic period, male and female users exhibit differing perceptions regarding various aspects of virtual meeting applications.

A t-test was conducted during the pre-pandemic period to evaluate significant differences in perceptions of various aspects of virtual meeting applications between male and female users.

Table 4.4

Gender – Users' Perception on the Various Aspects of Virtual Meeting Applications in The Pre-Pandemic Period

VARIABLES	GENDER						t – value	p – value
	Male			Female				
	N	Mean	SD	N	Mean	SD		
Perceived Benefits - Pre-Pandemic Period	332	19.80	3.829	268	14.36	3.123	19.154	0.000**
Convenience - Pre-Pandemic Period	332	17.46	2.702	268	12.14	2.072	27.319	0.000**
App Design - Pre-Pandemic Period	332	14.22	2.222	268	11.07	2.104	17.749	0.000**
Special Features - Pre-Pandemic Period	332	16.49	2.472	268	11.83	1.761	26.945	0.000**
Users' Perception on The Various Aspects of Virtual Meeting Applications (Pre-Pandemic Period)	**332**	**67.98**	**9.430**	**268**	**49.40**	**8.415**	**25.462**	**0.000****

Source: Primary Data
Note: Significance level at 1%

Inference

Given that in each of the aforementioned situations, the P values of the Independent Sample "t-test" are smaller than the Significant Value at 0.01, namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000), and Special Features (0.000) and also in

Users' Perception on the various aspects of Virtual Meeting Applications (Pre-Pandemic Period) Score (0.000), the Alternate Hypotheses is Accepted.

Out of four aspects of Virtual Meeting Applications (Pre-Pandemic Period), Male Users have more Perception on the 'Perceived Benefits' (M = 19.80) aspect than other Virtual Meeting Applications aspects and they have lesser Perception on the 'App Design' (M = 14.22) aspect than other Virtual Meeting Applications aspects. Similarly, out of four aspects of Virtual Meeting Applications in the Pre-Pandemic Period, Female Users have more Perception on the 'Perceived Benefits' (M = 14.36) aspect than other Virtual Meeting Applications aspects and they have lesser Perception on the 'App Design' (M = 11.07) aspect than other Virtual Meeting Applications aspects.

Male users had a higher mean score (M = 67.98) than female users (M = 49.40) based on the overall "Mean Score" of the Users' Perception on the different features of Virtual Meeting Applications during the Pre-Pandemic Period. This suggests that, compared to female users, men users had greater perception of the many facets of virtual meeting applications during the pre-pandemic period.

The results of the independent samples t-test analysis show that, prior to the pandemic, male and female users' perceptions of various aspects of virtual meeting applications differed significantly.

One Way ANOVA Analysis

Domain of Work / Study – Users' Perception on Various Aspects of Virtual Meeting Applications in The Pre-Pandemic Period

H_{1b}: The perception of various aspects of virtual meeting applications during the pre-pandemic period significantly differs among users based on their domain of work or study.

A one-way ANOVA was performed to investigate the significant difference in perception among users based on their domain of work or study regarding various aspects of virtual meeting applications during the pre-pandemic period.

Table 4.5
Domain of Work / Study – Users' Perception on The Various Aspects of Virtual Meeting Applications in The Pre- Pandemic Period

VARIABLES	DOMAIN OF WORK / STUDY				*F* – value	*p* – value
	Science / Engineering (203)	Medicine (134)	Commerce / Management (146)	Arts / Others (117)		
Perceived Benefits - Pre-Pandemic Period	18.92	14.83	19.08	15.46	45.470	0.000**
	4.061	4.434	3.329	4.236		
Convenience - Pre-Pandemic Period	16.03	13.75	16.81	12.82	45.848	0.000**
	3.236	3.975	2.118	3.530		
App Design - Pre-Pandemic Period	13.69	10.73	14.55	11.51	94.130	0.000**
	2.715	1.892	1.842	1.968		
Special Features - Pre-Pandemic Period	15.07	13.06	16.28	12.36	54.206	0.000**
	2.777	3.496	2.482	2.455		
Users' Perception on The Various Aspects of Virtual Meeting Applications (Pre-Pandemic Period)	**63.71**	**52.46**	**66.73**	**52.15**	**63.710**	**0.000****
	12.405	**13.164**	**6.460**	**11.429**		

Source: Primary Data
Note: No. of Users are shown in the Brackets and Significance level at 1%

Inference

The “P” values obtained from the “One-way ANOVA” test in each of the above cases are less than the Significant Value of 0.01, namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000) and Special Features (0.000) and also in Users’ Perception on the various aspects of Virtual Meeting Applications (Pre-Pandemic Period) Score (0.000), the Alternate Hypotheses is Accepted.

Further to attaining “statistical significance”, there is significant variation in the **mean score** among the Domain of Work/Study groups (M = 52.16 to 66.73). The domain of work/study pertaining to “Commerce / Management” had a higher mean score (M = 66.73) among users' perceptions of the various features of virtual meeting applications during the pre-pandemic period than the other groups. Therefore, it can be inferred that, compared to users in other domains, those in the Commerce / Management domain of work/study had a better perception of the different characteristics of virtual meeting applications during the pre-pandemic period.

The F-test indicates a statistically significant difference among users based on their domain of work or study regarding their perception of various aspects of virtual meeting applications during the pre-pandemic period.

4.2.2 During-Pandemic Period

Descriptive Statistical Analysis – Mean Analysis

Table 4.6
Users' Perception on The Various Aspects of Virtual Meeting Applications During Pandemic Period - Descriptive Statistics

VARIABLES	N	Mean	SD
It functions effectively in every situation without any crashes or connectivity issues irrespective of the internet bandwidth.	600	3.54	.866
It allows to join a meeting with multiple devices (phone, laptop and/or desktop computer, etc.) at once.	600	3.40	.787
The cost of this meeting platform is reasonable when compared with benefits.	600	3.18	1.063
It provides some storage on Google drive/Cloud to store recordings.	600	3.57	.810
The audio and virtual streaming are encrypted which prevents unauthorized access to the data.	600	3.46	.812
PERCEIVED BENEFITS	**600**	**17.14**	**2.957**
It is easy to create, connect and communicate with large audience.	600	3.71	1.085
It is simple to configure because no additional software installation is necessary on the desktop/phone.	600	3.64	.844
It is easy to mute and unmute the users as well as others.	600	3.78	.778
There is no time limit for personal use and can conduct unlimited number of meetings.	600	4.22	.844
Making presentation and reporting are always convenient and it is easy to share screen to others.	600	3.79	1.012
CONVENIENCE	**600**	**19.14**	**3.041**
The user Interface (UI) is simple to understand and easy to use.	600	2.85	.677
The UI is self-explanatory and does not require the need of any instructions or demo.	600	3.11	.727

The user interface is straightforward and attractive features.	600	3.13	.851
It provides flexibility to the users in customizing the user interface.	600	2.86	.448
The layout of the app is easily accessible and adjustable according to the convenient of the users.	600	3.25	.490
APP DESIGN	**600**	**15.20**	**1.673**
More number of participant capacity and adequate Length of group meeting (hours)	600	3.08	.527
Background filter and background noise cancellation	600	3.33	.813
Good security standards/Encryption	600	3.14	.811
Collaboration tools	600	3.08	.988
Full integration with related applications	600	3.16	.820
SPECIAL FEATURES	**600**	**15.78**	**2.808**
Users' Perception on The Various Aspects of Virtual Meeting Applications	**600**	**67.27**	**9.355**

Source: Primary Data

Inference

Table 4.6 outlines users' perceptions of various aspects of virtual meeting applications during the pandemic period in India. The data indicates that during this time, users rated "Convenience" (M = 19.14) and "Perceived Benefits" (M = 17.14) most favorably, compared to other aspects. Conversely, "App Design" (M = 15.20) and "Special Features" (M = 15.78) received lower ratings, indicating areas where users felt these applications could improve.

The analysis suggests that users' perceptions of virtual meeting applications during the pandemic were generally positive. Most of the mean values for the various aspects were above 3.25 out of 5 (65%), signifying an above-average level of satisfaction. The overall mean score was 67.27, equating to 67.27%, which translates to approximately 67%. This demonstrates that

the users' perceptions of virtual meeting applications during the pandemic were notably favorable, exceeding the average level in India.

Inferential Statistical Analysis

Independent Sample "T" Test

Gender – Users' Perception on The Various Aspects of Virtual Meeting Applications During the Pandemic Period

H_{1c}: During the Pandemic Period, male and female users exhibit differing perceptions regarding various aspects of virtual meeting applications.

Table 4.7

Gender – Users' Perception on The Various Aspects of Virtual Meeting Applications During the Pandemic Period

VARIABLES	GENDER						t – value	p – value
	Male			Female				
	N	Mean	SD	N	Mean	SD		
Perceived Benefits – During Pandemic Period	332	19.48	1.494	268	14.24	1.242	46.985	0.000**
Convenience - During Pandemic Period	332	21.02	2.266	268	16.81	2.135	23.333	0.000**
App Design - During Pandemic Period	332	16.19	1.019	268	13.98	1.508	20.525	0.000**
Special Features - During Pandemic Period	332	17.69	1.865	268	13.41	1.796	28.499	0.000**
Users' Perception on The Various Aspects of Virtual Meeting Applications (During Pandemic Period)	**332**	**74.39**	**4.926**	**268**	**58.44**	**5.012**	**39.030**	**0.000****

Source: Primary Data | Note: Significance level at 1%

Inference

Given that the P values are smaller than the Significant Value, at 0.01 in all the above cases, namely, Perceived Benefits – During Pandemic Period (0.000), Convenience – During Pandemic Period (0.000), App Design – During Pandemic Period (0.000) and Special Features – During Pandemic Period (0.000) and also in Users' Perception on the various aspects of Virtual Meeting Applications – During Pandemic Period Score (0.000), the Alternate Hypotheses is Accepted.

Out of four aspects of Virtual Meeting Applications During the Pandemic Period, Male Users have more Perception on the 'Perceived Benefits' (M = 19.48) aspect than other Virtual Meeting Applications aspects and they have less Perception on the 'App Design' (M = 16.19) aspect than other Virtual Meeting Applications aspects. Similarly, out of four aspects of Virtual Meeting Applications During the Pandemic Period, Female Users have more Perception on the 'Convenience' (M = 16.81) aspect than other Virtual Meeting Applications aspects. They have less Perception on the 'Special Features' (M = 13.41) aspect than other Virtual Meeting Applications aspects.

We can infer that, on the basis of the total mean score of the Users' Perception on the various aspects of Virtual Meeting Applications During the Pandemic Period, Male Users (M = 74.39) had a higher mean score than Female Users (M = 58.44). This suggests that throughout the pandemic, male users were more perceptive than female users about the many facets of virtual meeting applications.

The above Independent Sample t test analysis indicates that, "there is significant difference between the Male and Female Users with respect to the Perception on the various aspects of Virtual Meeting Applications during the Pandemic Period".

One Way ANOVA Analysis

Domain Of Work / Study – Users' Perception on The Various Aspects of Virtual Meeting Applications During the Pandemic Period

H_{1d}: During the pandemic period, significant variations exist among users' perceptions of various aspects of Virtual Meeting Applications based on their domains of work or study.

To analyse the hypothesis, a "one-way between-groups analysis of variance" was conducted.

Table 4.8
Domain of Work / Study – Users' Perception on The Various Aspects of Virtual Meeting Applications During the Pandemic Period

VARIABLES	DOMAIN OF WORK / STUDY				*F* – value	*p* – value
	Science / Engineering (203)	Medicine (134)	Commerce/ Management (146)	Arts / Others (117)		
Perceived Benefits – During Pandemic Period	18.20	15.53	17.55	16.64	27.045	0.000**
	2.269	2.917	2.441	3.685		
Convenience - During Pandemic Period	19.91	17.49	20.44	18.08	36.585	0.000**
	3.288	3.068	2.298	2.026		
App Design - During Pandemic Period	15.38	13.91	16.27	15.05	61.993	0.000**
	1.726	1.898	0.808	0.936		
Special Features - During Pandemic Period	16.29	14.45	16.98	14.92	28.181	0.000**
	2.314	3.789	2.520	1.391		
Users' Perception on The Various Aspects of Virtual Meeting Applications	**69.78**	**61.38**	**71.23**	**64.69**	**41.148**	**0.000****
	8.714	**10.732**	**6.799**	**7.236**		

Source: Primary Data
Note: No. of Users shown in the Bracket and Significance level at 1%

Inference

Given that the P values are smaller than the Significant Value at 0.01 in all the above cases, namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000) and Special Features (0.000) and also in Users' Perception on the various aspects of Virtual Meeting Applications (During Pandemic Period) Score (0.000), the Alternate Hypotheses is Accepted.

In addition to achieving statistical significance, there is a significant actual difference in mean score (M = 61.38 to 71.23) among the Domain of Work/Study groups. The category of work/study pertaining to "Commerce / Management" had a higher mean score (M = 71.23) among users' perceptions of various aspects of virtual meeting applications during the pandemic period than the other groups. Hence, it is inferred that the Users who belong to Commerce / Management domain of work/study have better Perception on the various aspects of Virtual Meeting Applications during the Pandemic Period than others.

F-test indicates during the pandemic period, users' perceptions of various aspects of virtual meeting applications differ significantly based on their domains of work or study.

4.2.3 Post Pandemic Period

Descriptive Statistical Analysis – Mean Analysis

Table 4.9

Users' Perception on The Various Aspects of Virtual Meeting Applications in the Post-Pandemic Period - Descriptive Statistics

VARIABLES	N	Mean	SD
It functions effectively in every situation without any crashes or connectivity issues irrespective of the internet bandwidth.	600	2.87	.809
It allows to join a meeting with multiple devices (phone, laptop and/or desktop computer, etc.) at once.	600	3.21	.977
The cost of this meeting platform is reasonable when compared with benefits.	600	3.24	.764
It provides some storage on Google drive/Cloud to store recordings.	600	3.00	1.354
The audio and virtual streaming are encrypted which prevents unauthorized access to the data.	600	3.42	1.151
PERCEIVED BENEFITS	**600**	**15.73**	**4.018**
It is easy to create, connect and communicate with large audience.	600	2.71	.726
It is simple to configure because no additional software installation is necessary on the desktop/phone.	600	3.03	.886
It is easy to mute and unmute the users as well as others.	600	2.94	.853
There is no time limit for personal use and can conduct unlimited number of meetings.	600	2.70	1.150
Making presentation and reporting are always convenient and it is easy to share screen to others.	600	2.79	.603
CONVENIENCE	**600**	**14.18**	**3.258**
The user Interface (UI) is simple to understand and easy to use.	600	2.22	.825
The UI is self-explanatory and does not require the need of any instructions or demo.	600	2.57	.579

The user interface is straightforward and attractive features.	600	2.35	.806
It provides flexibility to the users in customizing the user interface.	600	2.20	.823
The layout of the app is easily accessible and adjustable according to the convenient of the users.	600	2.43	.705
APP DESIGN	**600**	**11.77**	**2.673**
More number of participant capacity and adequate Length of group meeting (hours)	600	2.65	.654
Background filter and background noise cancellation	600	2.74	.579
Good security standards/Encryption	600	2.64	.736
Collaboration tools	600	2.37	.832
Full integration with related applications	600	2.77	.684
SPECIAL FEATURES	**600**	**13.16**	**2.568**
Users' Perception on The Various Aspects of Virtual Meeting Applications	**600**	**54.84**	**11.697**

Source: Primary Data

Inference

Table 4.9 provides insights into users' perceptions of various aspects of virtual meeting applications, post the pandemic phase in India. The data indicates that users rated "Perceived Benefits" (M = 15.73) and "Convenience" (M = 14.18) most highly compared to other aspects. In contrast, "Special Features" (M = 13.16) and "App Design" (M = 11.77) received lower ratings, suggesting these areas were less satisfactory to users.

The analysis reveals that users' perceptions of virtual meeting applications during the post-pandemic period were generally positive. Most mean values for the various aspects were above 2.50 out of 5 (50%), indicating an above-average level of satisfaction. The overall mean score was 54.84, translating to 54.84%, which indicates that users' perceptions were around 55%,

surpassing the average level. This suggests that while there were areas for improvement, users generally held favorable views of virtual meeting applications.

Inferential Statistical Analysis

Independent Sample "T" Test

Gender – Users' Perception on the Various Aspects of Virtual Meeting Applications in the Post-Pandemic Period

H_{1e}: During the post-pandemic period, there is a significant gender disparity in the perceptions of various aspects of virtual meeting applications.

To compare the significance between gender with respect to the Perception on the various aspects of Virtual Meeting Applications in the Post-Pandemic Period, the Independent-samples t-test was applied.

Table 4.10

Gender – Users' Perception on the Various Aspects of Virtual Meeting Applications in the Post-Pandemic Period

VARIABLES	GENDER						t – value	p – value
	Male			Female				
	N	Mean	SD	N	Mean	SD		
Perceived Benefits – Post Pandemic Period	332	18.21	3.282	268	12.66	2.394	23.939	0.000**
Convenience - Post Pandemic Period	332	16.52	2.228	268	11.28	1.563	33.741	0.000**
App Design - Post Pandemic Period	332	13.46	1.747	268	9.68	2.075	23.786	0.000**
Special Features - Post Pandemic Period	332	14.90	1.735	268	11.00	1.606	28.408	0.000**
Users' Perception on The Various Aspects of Virtual Meeting Applications – Post Pandemic Period	**332**	**63.09**	**7.501**	**268**	**44.63**	**6.914**	**31.312**	**0.000****

Source: Primary Data
Note: Significance level at 1%

Inference

Given that the P values are smaller than the Significant Value, at 0.01 in all the above cases, namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000) and Special Features (0.000) and also in Users' Perception on the various aspects of Virtual Meeting Applications (Post-Pandemic Period) Score (0.000), the Alternate Hypotheses is Accepted.

Out of four aspects of Virtual Meeting Applications (Post-Pandemic Period), Male Users have more Perception on the 'Perceived Benefits' (M = 18.21) aspect than other Virtual Meeting Applications aspects and they have less Perception on the 'App Design' (M = 13.46) aspect

than other Virtual Meeting Applications aspects. Similarly, out of four aspects of Virtual Meeting Applications (Post-Pandemic Period), Female Users have more Perception on the 'Perceived Benefits' (M = 12.66) aspect than other Virtual Meeting Applications aspects. They have less Perception on the 'App Design' (M = 9.68) aspect than other aspects.

Male users (M = 63.09) show higher mean scores than female users (M = 44.63) based on the overall mean scores of users' perceptions on various aspects of Virtual Meeting Applications. This indicates, Male users compared to female users had a higher perception on the various aspects of Virtual Meeting Applications in the post-pandemic period.

Above Independent Sample "t" test analysis indicates gender disparity gap between users with respect to the Perception on the various aspects of Virtual Meeting Applications in the Post-Pandemic Period.

One Way ANOVA

Domain of Work / Study – Users' Perception on the Various Aspects of Virtual Meeting Applications in the Post- Pandemic Period

H_{1f}: Users' Perception on the various aspects of Virtual Meeting Applications varies significantly with respect to their domain of work or study in the Post- Pandemic Period.

Table 4.11
Domain of Work / Study – Users' Perception on The Various Aspects of Virtual Meeting Applications in the Post-Pandemic Period

VARIABLES	DOMAIN OF WORK / STUDY				*F* – value	*p* – value
	Science / Engineering (203)	**Medicine (134)**	**Commerce/ Management (146)**	**Arts / Others (117)**		
Perceived Benefits – Post Pandemic Period	17.91	14.05	16.60	12.79	67.640	0.000**
	3.825	4.744	1.736	2.673		
Convenience - Post Pandemic Period	15.23	13.37	15.23	11.97	38.876	0.000**
	2.916	3.674	2.249	3.038		
App Design - Post Pandemic Period	13.01	10.20	12.94	9.97	79.258	0.000**
	2.522	2.267	2.260	1.739		
Special Features - Post Pandemic Period	13.82	12.54	14.34	11.26	47.931	0.000**
	2.518	2.694	1.608	2.202		
Users' Perception on The Various Aspects of Virtual Meeting Applications (Post-Pandemic Period)	**59.97**	**50.16**	**59.10**	**46.00**	**64.426**	**0.000****
	11.226	**12.726**	**6.333**	**8.843**		

Source: Primary Data
Note: No. of Users shown in the Brackets and Significance level at 1%

Inference

As a result of the One-way ANOVA test P values in all the aforementioned scenarios being smaller than the Significant Value at 0.01, namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000) and Special Features (0.000) and also in Users' Perception on the various aspects of Virtual Meeting Applications (Post-Pandemic Period) Score (0.000), the Alternate Hypotheses is Accepted.

In addition to achieving statistical significance, there is a considerable difference in the mean scores across different domains of work or study (M = 46.00 to 59.97) regarding users' perceptions of various aspects of Virtual Meeting Applications during the post-pandemic period. Specifically, individuals associated with the 'Science/Engineering' domain (M = 59.97) demonstrate heightened perceptions of these aspects compared to other groups.

Thus, based on the conducted One-way ANOVA analysis, it is evident that there exists a notable disparity among users' domains of work or study in relation to their perceptions of various aspects of Virtual Meeting Applications following the pandemic.

4.3 Research Question Three

What is the level of users' engagement towards online meetings through virtual meeting apps in India across the pandemic periods?

4.3.1 Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications (Pre-During-Post Pandemic Period) In the Pre- Pandemic Period

Objective 3

To assess the Users' Engagement towards Online Meeting with respect to pre-during-post Pandemic Period in India.

H2: Demographic factors and virtual meeting apps usage significantly differ in terms of user engagement across the pandemic periods.

4.3.1 Pre-Pandemic Period

Descriptive Statistical Analysis – Mean Analysis

Table 4.12

Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications In The Pre-Pandemic Period Descriptive Statistics

VARIABLES	N	Mean	SD
I find the ways to make the meeting interesting to me.	600	2.88	.823
I feel excited about attending meeting through the app.	600	3.14	.893
I eagerly and actively participate in the meeting conducted through Meeting App.	600	3.04	.908
I am very happy with the amount of time spend with interacting with peers through the app.	600	2.61	1.086
I discuss with my peers about possible ways to improve the effectiveness of meeting through the app.	600	3.05	.907
USERS' ENGAGEMENT	**600**	**14.72**	**3.592**

Inference

The above table 4.12 provides the information relating to the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period in India.

From the above table, it is inferred that the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period is above "average." This conclusion is drawn from the majority of "mean values" for the variables, which exceed 3 out of 5 (60%). The Overall Mean score of the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period is 14.72, which is 58.88% (14.72 / 25 x 100). This indicates that the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period in India is above 58% which is above the average level.

Inferential Statistical Analysis

Independent Sample "t" Test

Gender – Users' Engagement Towards Online Meeting Due To Virtual Meeting Applications In The Pre-Pandemic Period

H_{2a}: A significant disparity is observed between male and female users regarding their engagement towards online meetings facilitated by virtual meeting applications during the pre-pandemic period.

To investigate this difference, an independent "t-test" was conducted to compare the levels of engagement towards online meeting due to the virtual meeting applications in the pre-pandemic period between male and female users in this context.

Table 4.13

Gender – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications in The Pre-Pandemic Period

VARIABLE	GENDER						t – value	p – value
	Male			Female				
	N	Mean	SD	N	Mean	SD		
Users' Engagement (Pre-Pandemic Period)	332	16.85	3.123	268	12.08	2.049	22.494	0.000**

Source: Primary Data
Note: Significance level at 1%

Inference

Given that the P values are smaller than the Significant Value (0.01) in the Users' Engagement towards Online Meeting due to the Virtual Meeting Applications in the Pre-Pandemic Period (0.000), the Alternate Hypothesis is Accepted.

Based on the average scores for users' engagement with virtual meeting applications during the pre-pandemic period, male users (M = 16.85) demonstrate higher levels of engagement compared to female users (M = 12.08). This indicates a greater engagement among male users with online meetings facilitated by virtual meeting applications.

The Independent Sample t test research demonstrates that, "there is a significant difference between the engagement levels of male and female users with regard to online meetings as a result of virtual meeting apps during the pre-pandemic era."

One Way ANOVA Analysis

Domain Of Work / Study – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications in The Pre-Pandemic Period

H_{2b}: Users' engagement towards online meetings during the pre-pandemic period shows significant variation based on their domains of work or study.

To examine the significant differences in users' engagement with online meetings facilitated by virtual meeting applications during the pre-pandemic period across different domains of work or study, a one-way ANOVA was performed.

Table 4.14

Domain of Work / Study – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications in The Pre-Pandemic Period

VARIABLE	DOMAIN OF WORK / STUDY				*F* – value	*p* – value
	Science / Engineering (203)	Medicine (134)	Commerce/ Management (146)	Arts / Others (117)		
USERS' ENGAGEMENT (PRE-PANDEMIC PERIOD)	15.71	13.20	15.99	13.15	30.591	0.000**
	3.575	3.983	2.309	3.261		

Source: Primary Data

Note: No. of Users shown in the Brackets and Significance level at 1%

Inference

The one-way ANOVA test identified a significant difference in users' engagement with online meetings facilitated by virtual meeting applications during the pre-pandemic period, contingent upon their domains of work or study. The p-value from the ANOVA test was less than the significance threshold of 0.01 ($p = 0.000$), thereby leading to the acceptance of the alternate hypothesis.

Beyond achieving statistical significance, the mean scores among the work/study domains showed a moderate difference, ranging from 13.15 to 15.99. Notably, the "Commerce/Management" domain had the highest mean score ($M = 15.99$), indicating that users in this domain exhibited greater engagement with online meetings compared to other domains.

Hence, it can be inferred that users from the Commerce/Management domain displayed higher levels of engagement with online meetings facilitated by virtual meeting applications during the pre-pandemic period than their counterparts from other domains.

The F-test (one-way ANOVA) analysis conclusively demonstrates a significant disparity in users' engagement with online meetings, attributable to their domain of work or study during the pre-pandemic period.

4.3.2 During Pandemic Period

Descriptive Statistical Analysis – Mean Analysis

Table 4.15

Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications During Pandemic Period Descriptive Statistics

VARIABLES	N	Mean	SD
I find the ways to make the meeting interesting to me.	600	3.45	.882
I feel excited about attending meeting through the app.	600	3.57	.803
I eagerly and actively participate in the meeting conducted through Meeting App.	600	3.52	.749
I am very happy with the amount of time spend with interacting with peers through the app.	600	3.74	.664
I discuss with my peers about possible ways to improve the effectiveness of meeting through the app.	600	3.57	.937
USERS' ENGAGEMENT	**600**	**17.85**	**2.693**

Source: Primary Data

Inference

Table 4.15 presents data on users' engagement with online meetings facilitated by virtual meeting applications during the pandemic period. The data indicates that user

engagement during this time was above average, as the majority of the mean values for the variables exceeded 3.50 out of 5, representing 70%. This suggests a generally high level of engagement among users with virtual meeting applications throughout the pandemic period. The Overall Mean score of the Users' Engagement towards Online Meeting due to Virtual Meeting Applications During the Pandemic Period is 17.85, which is 71.40% (17.85 / 25 x 100). This indicates that the Users' Engagement towards Online Meeting due to Virtual Meeting Applications During the Pandemic Period is above 71% which is above the average level.

Inferential Statistical Analysis

Independent Sample "t" Test

Gender – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications During the Pandemic Period

H_{2c}: There is a significant disparity in the engagement levels towards online meetings facilitated by virtual meeting applications between male and female users during the pandemic period.

An independent-samples t-test was used to evaluate the significant difference in engagement between male and female users throughout the pandemic era towards virtual meeting applications.

Table 4.16

Gender – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications During the Pandemic Period

VARIABLE	GENDER						t – value	p – value
	Male			Female				
	N	Mean	SD	N	Mean	SD		
USERS' ENGAGEMENT (DURING PANDEMIC PERIOD)	332	19.60	1.859	268	15.69	1.868	25.543	0.000**

Source: Primary Data
Note: Significance level at 1%

Inference

The findings of the independent samples t-test reveal a statistically significant distinction between male and female users with respect to their participation in virtual meeting applications-facilitated online meetings during the pandemic period (p = 0.000, below the significance threshold of 0.01). As a result, the alternative hypothesis is accepted, indicating that there is an actual disparity in the participation levels of the genders.

Specifically, based on the mean scores, male users (M = 19.60) exhibit higher engagement compared to female users (M = 15.69) with online meetings facilitated by virtual meeting applications during the pandemic period. This indicates that male users are more actively engaged in online meetings compared to their female counterparts in this period.

In conclusion, the findings from the independent samples t-test underscore a significant gender-based disparity in engagement levels towards virtual meeting applications during

the pandemic, with male users showing notably higher levels of engagement than female users.

One Way ANOVA Analysis

Domain Of Work / Study – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications During the Pandemic Period

H_{2d}: There is a significant difference in users' engagement towards virtual meeting applications during the pandemic period across different domains of work or study.

To investigate this difference thoroughly, a one-way ANOVA was performed. This statistical analysis allows for a comprehensive examination of how users' engagement levels vary based on their respective domains of work or study in relation to virtual meeting applications during the pandemic period.

Table 4.17
Domain Of Work / Study – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications During the Pandemic Period

VARIABLE	DOMAIN OF WORK / STUDY				*F* – value	*p* – value
	Science / Engineering (203)	Medicine (134)	Commerce/ Management (146)	Arts / Others (117)		
USERS' ENGAGEMENT (DURING PANDEMIC PERIOD)	18.65	16.30	18.76	17.10	34.271	0.000**
	2.848	2.769	2.049	1.940		

Source: Primary Data

Inference

The One-way ANOVA test yielded a p-value of 0.000, which is smaller than the significance level (0.01) for users' engagement with online meetings facilitated by virtual meeting applications during the pandemic period. Thus, the alternative hypothesis is accepted, indicating significant differences among domains of work/study.

Furthermore, apart from statistical significance, there is a moderate difference in mean scores among the domains of work/study groups regarding users' engagement with online meetings during the pandemic period (M = 16.30 to 18.76). Specifically, the mean score for the "Commerce/Management" domain of work/study group is highest at 18.76 compared to others. Consequently, it is inferred that users affiliated with the Commerce/Management domain of work/study exhibit higher engagement towards online meetings facilitated by virtual meeting applications during the pandemic period compared to other domains.

In conclusion, the One-way ANOVA analysis confirms a "significant difference" among domains of work/study concerning users' engagement towards virtual meeting applications during the pandemic period.

4.3.3 Post Pandemic Period

Descriptive Statistical Analysis – Mean Analysis

Table 4.18
Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications Post Pandemic Period - Descriptive Statistics

VARIABLES	N	Mean	SD
I find the ways to make the meeting interesting to me.	600	2.87	.809
I feel excited about attending meeting through the app.	600	2.95	.724
I eagerly and actively participate in the meeting conducted through Meeting App.	600	3.10	.667

I am very happy with the amount of time spend with interacting with peers through the app.	600	2.80	1.191
I discuss with my peers about possible ways to improve the effectiveness of meeting through the app.	600	3.24	.991
USERS' ENGAGEMENT	**600**	**14.97**	**3.524**

Source: Primary Data

Inference

The data presented in Table 4.18 provides insights into users' engagement with online meetings facilitated by virtual meeting applications in the post-pandemic period. The majority of mean values for the variables in the table exceed 3 out of 5 (60%), indicating that overall engagement levels are above average. Specifically, the average score for users' engagement towards online meetings in the post-pandemic period is 14.97, which corresponds to 59.88% of the total possible score (14.97 / 25 x 100). This suggests that users' engagement with online meetings through virtual meeting applications in India during the post-pandemic period is notably higher than the average level, reflecting a strong adoption and utilization of these technologies.

Inferential Statistical Analysis

Independent Sample "t" Test

Gender – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications in Post-Pandemic Period

H_{2e}: Disparity was identified between male and female users regarding their levels of engagement towards virtual meeting applications in the post-pandemic period.

To thoroughly investigate and evaluate the substantial variations in engagement levels between male and female users with regard to Engagement towards Online Meeting owing to the Virtual

Meeting Applications in the Post-Pandemic Period, the observation led to the implementation of an independent-samples t-test.

Table 4.19
Gender – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications in The Post- Pandemic Period

VARIABLE	GENDER						t – value	p – value
	Male			Female				
	N	Mean	SD	N	Mean	SD		
USERS' ENGAGEMENT - POST-PANDEMIC PERIOD	332	17.30	2.639	268	12.08	2.024	27.403	0.000**

Source: Primary Data
Note: Significance level at 1%

Inference

An independent samples t-test was performed to assess user engagement with online meetings conducted via virtual meeting applications during the post-pandemic period. The test yielded a p-value of 0.000, which is below the significance threshold of 0.01. This result led to the rejection of the null hypothesis and the acceptance of the alternative hypothesis, indicating a statistically significant difference in engagement levels between male and female users.

Mean scores revealed that male users (M = 17.30) exhibited higher engagement compared to female users (M = 12.08) with online meetings conducted via virtual meeting applications in the post-pandemic era. This finding suggests that male users were more actively involved in using these applications for online meetings than their female counterparts.

The above Independent Sample t-test analysis indicates that, "there is a significant difference between Male and Female Users with respect to Engagement towards Online Meeting due to the Virtual Meeting Applications in the Post-Pandemic Period."

One Way ANOVA Analysis

Domain Of Work / Study – Users' Engagement Towards Online Meeting Due to Virtual Meeting Applications in The Post-Pandemic Period

H_{2f}: There exists a significant disparity in users' engagement levels towards virtual meeting applications across different domains of work or study during the post-pandemic period.

To thoroughly examine these differences among the Domain of the Work / Study with respect to the Users' Engagement towards Online Meeting due to the Virtual Meeting Applications in the Post-Pandemic Period, detailed one-way between-groups analysis of variance (ANOVA) was used to investigate these differences in detail.

Table 4.20
Domain Of Work / Study – Users' Engagement Towards Online Meeting Due To Virtual Meeting Applications In The Post-Pandemic Period

VARIABLE	DOMAIN OF WORK / STUDY				*F* – value	*p* – value
	Science / Engineering (203)	Medicine (134)	Commerce/ Management (146)	Arts / Others (117)		
USERS' ENGAGEMENT - POST-PANDEMIC PERIOD	16.68	13.39	16.23	12.23	75.210	0.000**
	3.498	3.709	1.785	2.336		

Source: Primary Data
Note: No. of Users shown in the Brackets and Significance level at 1%

Inference

The results of the one-way ANOVA test indicate a statistically significant difference in users' engagement with online meetings facilitated by virtual meeting applications during the post-pandemic period ($p = 0.000$, Sig. Value < 0.01). This leads to the acceptance of the alternate hypothesis.

Furthermore, in addition to achieving statistical significance, there is a substantial difference in the mean scores across different domains of work or study regarding users' engagement with virtual meeting applications in the post-pandemic period ($M = 12.23$ to 16.68). Specifically, users affiliated with the 'Science/Engineering' domain of work/study show the highest mean engagement score ($M = 16.68$) compared to other groups. This suggests that individuals in the Science/Engineering domain are more engaged with online meetings facilitated by virtual meeting applications during the post-pandemic period than those in other domains.

In summary, the conducted F-Test; one-way ANOVA analysis confirms a significant disparity among the Domain of the Work / Study with respect to the Users' Engagement towards Virtual Meeting Applications in the Post-Pandemic Period.

4.4 Research Question Four

How does the post-usage behaviour of users towards virtual meeting apps change in India across the pandemic periods?

Objective 4

To examine the post-usage behaviour of users towards Virtual Meeting Applications with respect to pre-during-post pandemic period in India.

H3: Post-usage behaviour towards virtual meeting applications differs significantly among users based on demographic characteristics and app usage patterns across the pandemic periods.

4.4.1 Pre-Pandemic Period

Descriptive Statistical Analysis – Mean Analysis

Table 4.21

Post-Usage Behaviour Online Meeting Due to Virtual Meeting Applications in The Pre-Pandemic Period Descriptive Statistics

VARIABLES	N	Mean	SD
This Meeting App enhances my communicating experience.	600	2.91	.865
I would consider this Meeting App as my first choice for my online meeting purposes.	600	3.19	.925
I would like to recommend others to use this Meeting app.	600	3.12	.900
I actively encourage others to use this Meeting app for communication purpose.	600	2.68	1.136
I consider myself to be the loyal user of this Meeting app.	600	3.15	.925
POST-USAGE BEHAVIOUR	**600**	**15.06**	**3.757**

Source: Primary Data

Inference

The above table 4.21 describes the information relating to the Post-Usage Behaviour of Users towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period.

From the above table, it is inferred that the Post-Usage Behaviour towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period is above the average level since majority of the Mean value of the variables are above 3 (60%) out of 5. The Overall

Mean score of the Post-Usage Behaviour towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period is 15.06, which is 60.24% (15.06 / 25 x 100). This indicates that the Post-Usage Behaviour towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period is above 60% which is above the average level.

Inferential Statistical Analysis

Independent Sample "t" Test

Gender – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications in The Pre-Pandemic Period

H_{3a}: During the pre-pandemic period, there existed a significant disparity in the post-usage behaviours of male and female users towards virtual meeting applications.

To examine difference between the Male and Female Users with respect to Post-Usage Behaviour towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period, the Independent-samples t-test was employed.

Table 4.22
Gender – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications in The Pre- Pandemic Period

VARIABLES	GENDER						t – value	p – value
	Male			Female				
	N	Mean	SD	N	Mean	SD		
POST-USAGE BEHAVIOUR – PRE-PANDEMIC PERIOD	332	17.32	3.260	268	12.25	2.044	23.263	0.000**

Source: Primary Data
Note: Significance level at 1%

Inference

The p-value obtained is 0.000, which is below the significance threshold of 0.01, resulting in the acceptance of the alternative hypothesis. This suggests that there is a statistically significant difference between male and female users in their post-usage behaviours regarding online meetings conducted through virtual meeting applications during the period before the pandemic.

Furthermore, analyzing the mean scores of post-usage behaviour towards online meetings due to virtual meeting applications in the pre-pandemic period reveals that male users (M = 17.32) exhibit higher mean scores compared to female users (M = 12.25). This suggests that male users tend to demonstrate more positive post-usage behaviours towards virtual meeting applications during the pre-pandemic period than their female counterparts.

In summary, t-test confirms a significant difference between male and female users concerning their post-usage behaviours towards virtual meeting applications in the pre-pandemic period, with male users displaying higher levels of positive engagement in this context.

One Way ANOVA Analysis

Domain Of Work / Study – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications in The Pre-Pandemic Period

H_{3b}: Users' post-usage behaviour towards virtual meeting applications during the pre-pandemic phase varies significantly depending on their domain of work or study.

Table 4.23

Domain Of Work / Study – Post-Usage Behaviour Towards Online Meeting Due To Virtual Meeting Applications In The Pre-Pandemic Period

VARIABLES	DOMAIN OF WORK / STUDY				*F* – value	*p* – value
	Science / Engineering (203)	Medicine (134)	Commerce/ Management (146)	Arts / Others (117)		
POST-USAGE BEHAVIOUR	16.15	13.63	16.38	13.13	33.017	0.000**
	3.673	4.158	2.619	3.258		

Source: Primary Data

Note: No. of Users shown in the Brackets and Significance level at 1%

Inference

The one-way ANOVA test reveal a statistically significant difference in post-usage behaviours towards virtual meeting applications during the pre-pandemic period (p = 0.000, Sig. Value less than 0.01). Consequently, the alternate hypothesis is accepted.

Beyond achieving statistical significance, there is a moderate difference in the mean scores across various domains of work or study with respect to post-usage behaviour (M = 13.13 to 16.38). Specifically, users within the 'Commerce/Management' domain exhibit the highest mean score (M = 16.38), indicating more positive post-usage behaviours towards online meetings facilitated by virtual meeting applications compared to other domains.

Thus, it can be inferred that users in the 'Commerce/Management' domain had more favorable post-usage behaviours towards online meetings during the pre-pandemic period than users from other domains.

This analysis underscores a significant difference among the domains of work or study regarding post-usage behaviours towards virtual meeting applications during the pre-pandemic period.

4.4.2 During Pandemic Period

Descriptive Statistical Analysis – Mean Analysis

Table 4.24

Post-Usage Behaviour Online Meeting Due to Virtual Meeting Applications In The During Pandemic Period - Descriptive Statistics

VARIABLES	N	Mean	SD
This Meeting App enhances my communicating experience.	600	3.29	.748
I would consider this Meeting App as my first choice for my online meeting purposes.	600	3.50	.742
I would like to recommend others to use this Meeting app.	600	3.40	.669
I actively encourage others to use this Meeting app for communication purpose.	600	3.53	.678
I consider myself to be the loyal user of this Meeting app.	600	3.38	.754
POST-USAGE BEHAVIOUR	**600**	**17.10**	**2.559**

Source: Primary Data

Inference

The above table 4.24 describes the information relating to the Post-Usage Behaviour of Users towards Online Meeting due to Virtual Meeting Applications During the Pandemic Period.

The table above indicates that post-usage behaviour towards online meetings facilitated by virtual meeting applications during the pandemic period is generally above average, as most mean values for the variables exceed 3.25 out of 5 (65%). The overall mean score for post-usage behaviour during this period is 17.10, which translates to 68.40% (17.10 / 25 x 100). This indicates that the Post-Usage Behaviour towards Online Meeting due to Virtual Meeting Applications During the Pandemic Period is above 68% which is above the average level.

Inferential Statistical Analysis

Independent Sample "t" Test

Gender – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications During the Pandemic Period

H_{3c}: Male and female users exhibit significant differences in their post-usage behaviours towards virtual meeting applications engaged during the pandemic period.

Table 4.25

Gender – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications During the Pandemic Period

VARIABLES	GENDER						t – value	p – value
	Male			Female				
	N	Mean	SD	N	Mean	SD		
POST-USAGE BEHAVIOUR – DURING - PANDEMIC PERIOD	332	18.83	1.797	268	14.95	1.523	28.620	0.000**

Source: Primary Data
Note: Significance level at 1%

Inference

The results indicate that the p-value is significantly lower than the significance threshold of 0.01 (p = 0.000), leading to the acceptance of the alternate hypothesis.

An examination of the mean scores for post-usage behaviour towards virtual meeting applications during the pandemic period reveals that male users (M = 18.83) exhibit higher mean scores compared to female users (M = 14.95). This suggests that male users demonstrate more positive post-usage behaviours towards online meetings using virtual meeting applications during the pandemic period than female users.

The analysis of the independent samples t-test confirms a significant difference between male and female users in terms of their post-usage behaviour towards online meetings facilitated by virtual meeting applications during the pandemic period. This finding underscores the disparity in how male and female users engaged with and responded to virtual meeting applications after their use during the pandemic.

One Way ANOVA Analysis

Domain Of Work / Study – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications During the Pandemic Period

H_{3d}: In relation to post-usage behaviour towards virtual meeting applications during the pandemic period, significant differences exist across users' domains of work and study.

To explore these variations among users' domains of work/study regarding post-usage behaviour towards virtual meeting applications during the pandemic period, a one-way ANOVA was performed.

Table 4.26

Domain Of Work / Study – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications During the Pandemic Period

VARIABLES	DOMAIN OF WORK / STUDY				*F* – value	*p* – value
	Science / Engineering (203)	Medicine (134)	Commerce/ Management (146)	Arts / Others (117)		
Post-Usage Behaviour – During - Pandemic Period	**17.95**	**15.96**	**17.80**	**16.03**	**30.849**	**0.000****
	2.817	**2.594**	**1.700**	**20.028**		

Source: Primary Data

No. of Users shown in the Brackets and Significance level at 1%

Inference

The One-way ANOVA test yielded a P value (0.000) below the significance level (0.01) for the Post-Usage Behaviour towards online meetings facilitated by virtual meeting applications during the pandemic period, indicating acceptance of the alternative hypothesis.

In addition to achieving statistical significance, there is a moderate difference in the mean scores across the domains of work/study (M = 15.96 to 17.95). Specifically, users in the “Science/Engineering” domain demonstrated the highest mean score (M = 17.95) for Post-Usage Behaviour towards online meetings facilitated by virtual meeting applications during the pandemic period compared to other groups.

Therefore, it can be inferred that individuals in the 'Science/Engineering' domain exhibit more positive Post-Usage Behaviour towards online meetings facilitated by virtual meeting applications during the pandemic period compared to their counterparts in other domains of work/study.

As a result, there exists a significant gap among the domains of work/study related to their Post-Usage Behaviour with respect to virtual meeting applications-facilitated online meetings throughout the pandemic.

4.4.3 Post Pandemic Period

Descriptive Statistical Analysis – Mean Analysis

Table 4.27

Post-Usage Behaviour Online Meeting Due to Virtual Meeting Applications in The Post-Pandemic Period Descriptive Statistics

VARIABLES	N	Mean	SD
This Meeting App enhances my communicating experience.	600	2.76	.801
I would consider this Meeting App as my first choice for my online meeting purposes.	600	2.74	.619
I would like to recommend others to use this Meeting app.	600	2.86	.747
I actively encourage others to use this Meeting app for communication purpose.	600	2.50	1.021
I consider myself to be the loyal user of this Meeting app.	600	2.87	.813
POST-USAGE BEHAVIOUR	**600**	**13.75**	**3.091**

Source: Primary Data

Inference

Table 4.27 provides details on users' post-usage behaviour regarding online meetings facilitated by virtual meeting applications during the post-pandemic period. The data indicates that this behaviour is generally above average, as most variables have mean values exceeding 2.75, representing 55% of the maximum score of 5. The overall mean score for post-usage behaviour is 13.75, equating to 55% of the maximum possible score of 25. This suggests that users' post-usage behaviour towards online meetings, in the context of virtual meeting applications, is somewhat above the average level in the post-pandemic era.

Inferential Statistical Analysis

Independent Sample "t" Test

Gender – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications in The Post-Pandemic Period

H_{3e}: In the post-pandemic period, there is a significant difference in the post-usage behaviours of male and female users regarding virtual meeting applications and online meetings.

In order to compare the significant difference between the Male and Female Users with respect to Post-Usage Behaviour towards Online Meeting due to Virtual Meeting Applications in the Post-Pandemic Period, the Independent-samples t-test was employed.

Table 4.28

Gender – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications in The Post- Pandemic Period

VARIABLES	GENDER						t – value	p – value
	Male			Female				
	N	Mean	SD	N	Mean	SD		
Post-Usage Behaviour – Post -Pandemic Period	332	15.86	2.268	268	11.12	1.598	29.993	0.000**

Source: Primary Data
Note: Significance level at 1%

Inference

Since the p-value (0.000) obtained from the independent samples t-test is lower than the significance level (0.01), we reject the null hypothesis and accept the alternative hypothesis. This indicates a significant difference between male and female users regarding their post-usage behaviour towards online meetings facilitated by virtual meeting applications during the post-pandemic period.

Analyzing the mean scores of post-usage behaviour towards online meetings, male users (M = 15.86) exhibit higher scores compared to female users (M = 11.12). This suggests that male users generally demonstrate more positive post-usage behaviour towards virtual meeting applications in the post-pandemic period than their female counterparts. This finding underscores a gender-related distinction in how users perceive and engage with virtual meeting technologies after the pandemic.

One Way ANOVA Analysis

Domain Of Work / Study – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications in The Post-Pandemic Period

H_{3f}: In the post-pandemic period, there exists significant variation in the post-usage behaviour of users towards virtual meeting applications across different domains of work and study.

Table 4.29
Domain Of Work / Study – Post-Usage Behaviour Towards Online Meeting Due to Virtual Meeting Applications in The Post-Pandemic Period

VARIABLES	DOMAIN OF WORK / STUDY				*F* – value	*p* – value
	Science / Engineering (203)	Medicine (134)	Commerce/ Management (146)	Arts / Others (117)		
Post-Usage Behaviour – Post-Pandemic Period	14.76	12.84	14.97	11.49	49.289	0.000**
	3.167	3.117	2.097	2.329		

Source: Primary Data
Note: No. of Users shown in the Brackets and Significance level at 1%

Inference

Since the p-value of the one-way ANOVA test (0.000) is less than the significance level (0.01) for the Post-Usage Behaviour towards by virtual meeting applications in the post-pandemic period, the alternative hypothesis is accepted. This indicates that there are significant differences in post-usage behaviour among different domains of work or study.

Furthermore, aside from achieving statistical significance, there is a moderate difference in the mean scores among the domains of work/study (M = 11.49 to 14.97). Specifically, users in the "Commerce/Management" domain exhibit the highest mean score for post-usage behaviour towards online meetings due to virtual meeting applications (M = 14.97), surpassing other groups.

Therefore, it can be inferred that individuals in the "Commerce/Management" domain demonstrate more positive post-usage behaviour towards online meetings facilitated by virtual meeting applications during the post-pandemic period compared to users in other domains of work or study.

This underscores the significant impact of domain-specific factors on users' perceptions and behaviour in adopting virtual meeting technologies in a post-pandemic environment.

4.5 Research Question Five

What are the relationships among users' perception, engagement, and post-usage behaviour towards virtual meeting apps in India across the pandemic periods?

Objective 5

To analyse the relationships among Users' Perception, Engagement and Post-usage behaviour towards Virtual Meeting Applications with respect to pre-during-post pandemic period in India.

H_4: Users' perceptions, engagement, and post-usage behaviour towards virtual meeting applications are significantly related across the pandemic periods.

4.5.1 Pre-Pandemic Period

Correlation Analysis

H_{4a}: User perception on various aspects of virtual meeting applications and how they engage with online meetings during the pre-pandemic period are significantly correlated.

A Pearson product-moment correlation was run to determine the relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period.

Table 4.30

Relationship Between the Users' Perception and Engagement Towards Online Meeting in The Pre-Pandemic Period

VARIABLES	N	'r' VALUE	P-VALUE	RELATIONSHIP	REMARKS	
					SIGNIFICANT	RESULT
Perceived Benefits – Users' Engagement	600	0.796**	0.000	Positive	Significant	ACCEPTED
Convenience – – Users' Engagement	600	0.859**	0.000	Positive	Significant	ACCEPTED
App Design – – Users' Engagement	600	0.659**	0.000	Positive	Significant	ACCEPTED
Special Features – Users' Engagement	600	0.848**	0.000	Positive	Significant	ACCEPTED
Users' Perception on the various aspects of Virtual Meeting Applications – Users' Engagement	**600**	**0.861****	**0.000**	**Positive**	**Significant**	**ACCEPTED**

****. Correlation is significant at the 0.01 level (2-tailed).**

Inference

As the P value are lesser than Sig. Value (0.01) in the above relationships between Users' Perception on the various aspects of Virtual Meeting Applications in the Pre-Pandemic Period and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000) and Special Features (0.000), the Alternate Hypotheses is Accepted.

There are moderate and high positive correlation between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period. The relationships between them are highly significant.

Out of four aspects of the Virtual Meeting Applications in the Pre-Pandemic Period, 'Convenience' has more relationship (r = 0.859) with 'Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period' when compared with others and 'App Design' has less relationship (r = 0.659) with 'Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period' when compared with others. Overall, Users' Perception on the various aspects of Virtual Meeting Applications has high and strong relationship (r = 0.861) with 'Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period'

From the Correlation Analysis, it is concluded that, "there is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Pre-Pandemic Period."

Correlation Analysis

Relationship Between Users' Perception on The Various Aspects of Virtual Meeting Applications and Post-Usage Behaviour Towards Virtual Meeting Applications In The Pre-Pandemic Period

H_{4b}: There is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period.

A Pearson product-moment correlation was run to determine the relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period.

Table 4.31

Relationship Between the Users' Perception And

Post-Usage Behaviour Towards Virtual Meeting Applications in The Pre-Pandemic Period

VARIABLES	N	*'r'* VALUE	*P* - VALUE	RELATIONSHIP	REMARKS	
					SIGNIFICANT	RESULT
Perceived Benefits – Post-Usage Behaviour	600	0.825**	0.000	Positive	Significant	ACCEPTED
Convenience – Post-Usage Behaviour	600	0.880**	0.000	Positive	Significant	ACCEPTED
App Design – Post-Usage Behaviour	600	0.634**	0.000	Positive	Significant	ACCEPTED
Special Features – Post-Usage Behaviour	600	0.875**	0.000	Positive	Significant	ACCEPTED
Users' Perception on the various aspects of Virtual Meeting Applications – Post-Usage Behaviour	**600**	**0.878****	**0.000**	**Positive**	**Significant**	**ACCEPTED**

Inference

As the P value are lesser than Sig. Value (0.01) in the above relationships between Users' Perception on the various aspects of Virtual Meeting Applications in the Pre-Pandemic Period and the Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000) and Special Features (0.000), the Alternate Hypotheses is Accepted.

There are moderate and high positive correlation between the Users' Perception on the various aspects of Virtual Meeting Applications and the Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period. The relationships between them are highly significant.

Out of four aspects of the Virtual Meeting Applications, 'Convenience' has more relationship (r = 0.880) with 'Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period' when compared with others and 'App Design' has less relationship (r = 0.634) with 'Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period' when compared with others. Overall, Users' Perception on the various aspects of Virtual Meeting Applications in the Pre-Pandemic Period has high relationship (r = 0.878) with 'Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period'.

From the Correlation Analysis, it is concluded that, "there is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period."

4.5.2 DURING PANDEMIC PERIOD

Correlation Analysis

Relationship Between Users' Perception on The Various Aspects of Virtual Meeting Applications and Users' Engagement Towards Online Meeting During the Pandemic Period

H_{4c}: There is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications During the Pandemic Period.

A "Pearson product-moment correlation" was run to determine the relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications During the Pandemic Period.

Table 4.32

Relationship Between the Users' Perception and Engagement Towards Online Meeting Due to Virtual Meeting Applications During the Pandemic Period

VARIABLES	N	'r' VALUE	P - VALUE	RELATIONSHIP	REMARKS	
					SIGNIFICANT	RESULT
Perceived Benefits – Users' Engagement	600	0.723**	0.000	Positive	Significant	ACCEPTED
Convenience – Users' Engagement	600	0.905**	0.000	Positive	Significant	ACCEPTED
App Design – Users' Engagement	600	0.663**	0.000	Positive	Significant	ACCEPTED
Special Features – Users' Engagement	600	0.798**	0.000	Positive	Significant	ACCEPTED
Users' Perception on the various aspects of Virtual Meeting Applications – Users' Engagement	**600**	**0.881****	**0.000**	**Positive**	**Significant**	**ACCEPTED**

****. Correlation is significant at the 0.01 level (2-tailed).**

Inference

As the P value are lesser than Sig. Value (0.01) in the above relationships between Users' Perception on the various aspects of Virtual Meeting Applications During the Pandemic Period and the Users' Engagement towards Online Meeting due to Virtual Meeting

Applications During the Pandemic Period namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000) and Special Features (0.000), the Alternate Hypotheses is Accepted.

There are moderate and high positive correlation between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications During the Pandemic Period. The relationships between them are highly significant.

Out of four aspects of the Virtual Meeting Applications During the Pandemic Period, 'Convenience' has more relationship (r = 0.905) with Users' Engagement towards Online Meeting due to Virtual Meeting Applications when compared with others and 'App Design' has less relationship (r = 0.663) with Users' Engagement towards Online Meeting due to Virtual Meeting Applications when compared with others. Overall, Users' Perception on the various aspects of Virtual Meeting Applications has high relationship (r = 0.881) with 'Users' Engagement towards Online Meeting due to Virtual Meeting Applications During the Pandemic Period'.

From the Correlation Analysis, it is concluded that, "there is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications During the Pandemic Period."

Correlation Analysis

Relationship Between Users' Perception on The Various Aspects of Virtual Meeting Applications and Post-Usage Behaviour Towards Virtual Meeting Applications During the Pandemic Period.

H_{4d}: There is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and Post-Usage Behaviour towards Virtual Meeting Applications during the Pandemic Period.

A "Pearson product-moment correlation" was run to determine the relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and Post-Usage Behaviour towards Virtual Meeting Applications during the Pandemic Period.

Table 4.33

Relationship Between the Users' Perception and Engagement Towards Virtual Meeting Applications During the Pandemic Period

VARIABLES	**N**	***'r'* VALUE**	***P* - VALUE**	**RELATIONSHIP**	**REMARKS**	
					SIGNIFICANT	**RESULT**
Perceived Benefits – Post-Usage Behaviour	600	0.782**	0.000	Positive	Significant	ACCEPTED
Convenience – Post-Usage Behaviour	600	0.865**	0.000	Positive	Significant	ACCEPTED
App Design – Post-Usage Behaviour	600	0.653**	0.000	Positive	Significant	ACCEPTED
Special Features – Post-Usage Behaviour	600	0.804**	0.000	Positive	Significant	ACCEPTED
Users' Perception on the various aspects of Virtual Meeting Applications – Post-Usage Behaviour	**600**	**0.886****	**0.000**	**Positive**	**Significant**	**ACCEPTED**

****. Correlation is significant at the 0.01 level (2-tailed).**

Inference

As the P value are lesser than Sig. Value (0.01) in the above relationships between Users' Perception on the various aspects of Virtual Meeting Applications during the Pandemic Period and the Post-Usage Behaviour towards Virtual Meeting Applications during the Pandemic Period namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000) and Special Features (0.000), the Alternate Hypotheses is Accepted.

There are moderate and high positive correlation between the Users' Perception on the various aspects of Virtual Meeting Applications and the Post-Usage Behaviour towards Virtual Meeting Applications during the Pandemic Period. The relationships between them are highly significant.

Out of four aspects of the Virtual Meeting Applications During the Pandemic Period, 'Convenience' has more relationship (r = 0.865) with 'Post-Usage Behaviour towards Virtual Meeting Applications during the Pandemic Period' when compared with others and 'App Design' has less relationship (r = 0.653) with 'Post-Usage Behaviour towards Virtual Meeting Applications during the Pandemic Period' when compared with others. Overall, Users' Perception on the various aspects of Virtual Meeting Applications during the Pandemic Period has high relationship (r = 0.886) with 'Post-Usage Behaviour towards Virtual Meeting Applications during the Pandemic Period'.

From the Correlation Analysis, it is concluded that, "there is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and Post-Usage Behaviour towards Virtual Meeting Applications during the Pre-Pandemic Period."

4.5.3 Post-Pandemic Period

Correlation Analysis

Relationship Between Users' Perception on The Various Aspects of Virtual Meeting Applications and Users' Engagement Towards Online Meeting in The Post-Pandemic Period

H_{4e}: There is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Post-Pandemic Period.

A "Pearson product-moment correlation" was run to determine the relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Post-Pandemic Period.

Table 4.34

Relationship Between the Users' Perception and Engagement Towards Online Meeting in The Post-Pandemic Period

VARIABLES	N	*'r'* VALUE	*P* - VALUE	RELATIONSHIP	REMARKS	
					SIGNIFICANT	RESULT
Perceived Benefits – Users' Engagement	600	0.978**	0.000	Positive	Significant	ACCEPTED
Convenience – Users' Engagement	600	0.923**	0.000	Positive	Significant	ACCEPTED
App Design – Users' Engagement	600	0.750**	0.000	Positive	Significant	ACCEPTED
Special Features – Users' Engagement	600	0.904**	0.000	Positive	Significant	ACCEPTED
Users' Perception on the various aspects of Virtual Meeting Applications – Users' Engagement	**600**	**0.963****	**0.000**	**Positive**	**Significant**	**ACCEPTED**

****. Correlation is significant at the 0.01 level (2-tailed).**

Inference

As the P value are lesser than Sig. Value (0.01) in the above relationships between Users' Perception on the various aspects of Virtual Meeting Applications in the Post-Pandemic Period and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Post-Pandemic Period namely, Perceived Benefits (0.000), Convenience

(0.000), App Design (0.000) and Special Features (0.000), the Alternate Hypotheses is Accepted.

There are moderate and high positive correlation between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Post-Pandemic Period. The relationships between them are highly significant.

Out of four aspects of the Virtual Meeting Applications in the Post-Pandemic Period, 'Perceived Benefits' has more relationship (r = 0.978) with Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Post-Pandemic Period when compared with others and 'App Design' has less relationship (r = 0.750) with Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Post-Pandemic Period' when compared with others. Overall, Users' Perception on the various aspects of Virtual Meeting Applications has very high and strong relationship (r = 0.963) with Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Post-Pandemic Period.

From the Correlation Analysis, it is concluded that, "there is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and the Users' Engagement towards Online Meeting due to Virtual Meeting Applications in the Post-Pandemic Period."

Correlation Analysis

Relationship Between Users' Perception on The Various Aspects of Virtual Meeting Applications and Post-Usage Behaviour Towards Virtual Meeting Applications in The Post-Pandemic Period

H_{4f}: There is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and Post-Usage Behaviour towards Virtual Meeting Applications in the Post-Pandemic Period.

A "Pearson product-moment correlation" was run to determine the relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and Post-Usage Behaviour towards Virtual Meeting Applications in the Post-Pandemic Period.

Table 4.35

Relationship Between the Users' Perception And

Post-Usage Behaviour Towards Virtual Meeting Applications in The Post-Pandemic Period

VARIABLES	N	*'r'* VALUE	*P* - VALUE	RELATIONSHIP	REMARKS	
					SIGNIFICANT	RESULT
Perceived Benefits – Post-Usage Behaviour	600	0.866**	0.000	Positive	Significant	ACCEPTED
Convenience – Post-Usage Behaviour	600	0.928**	0.000	Positive	Significant	ACCEPTED
App Design – Post-Usage Behaviour	600	0.759**	0.000	Positive	Significant	ACCEPTED
Special Features – Post-Usage Behaviour	600	0.894**	0.000	Positive	Significant	ACCEPTED
Users' Perception on the various aspects of Virtual Meeting Applications	**600**	**0.926****	**0.000**	**Positive**	**Significant**	**ACCEPTED**

****. Correlation is significant at the 0.01 level (2-tailed).**

Inference

As the P value are lesser than Sig. Value (0.01) in the above relationships between Users' Perception on the various aspects of Virtual Meeting Applications in the Post-Pandemic Period and the Post-Usage Behaviour towards Virtual Meeting Applications in the Post-Pandemic Period namely, Perceived Benefits (0.000), Convenience (0.000), App Design (0.000) and Special Features (0.000), the Alternate Hypotheses is Accepted.

There are moderate and high positive correlation between the Users' Perception on the various aspects of Virtual Meeting Applications and the Post-Usage Behaviour towards Virtual Meeting Applications in the Post-Pandemic Period. The relationships between them are highly significant.

Out of four aspects of the Virtual Meeting Applications, 'Convenience' has more relationship (r = 0.928) with 'Post-Usage Behaviour towards Virtual Meeting Applications in the Post-Pandemic Period' when compared with others and 'App Design' has less relationship (r = 0.759) with 'Post-Usage Behaviour towards Virtual Meeting Applications in the Post-Pandemic Period' when compared with others. Overall, Users' Perception on the various aspects of Virtual Meeting Applications has high and strong relationship (r = 0.926) with 'Post-Usage Behaviour towards Virtual Meeting Applications in the Post-Pandemic Period'.

From the Correlation Analysis, it is concluded that, "there is a significant relationship between the Users' Perception on the various aspects of Virtual Meeting Applications and Post-Usage Behaviour towards Virtual Meeting Applications in the Post-Pandemic Period."

4.6 Research Question Six

How does users' perception of various aspects of virtual meeting apps impact their engagement and post-usage behaviour in India across the pandemic periods?

Objective 6

To assess the impact of Users' Perception on Engagement and Post-usage behaviour towards Virtual Meeting Applications with respect to pre-during-post pandemic period in India.

H_5: Users' Perception on the various aspects of Virtual Meeting Applications has a significant impact on Engagement towards Online Meeting with respect to pre-during-post pandemic period.

MULTI-VARIATE STATISTICAL ANALYSIS

4.6.1 Pre-Pandemic Period

Users' Perception on The Various Aspects of Virtual Meeting Applications and Users' Engagement Towards Online Meeting in The Pre-Pandemic Period

H_{5a}: Users' Perception on the various aspects of Virtual Meeting Applications has a significant impact on Engagement towards Online Meeting with respect to pre-pandemic period.

Multiple Regression Analysis

In this Multiple Regression Analysis (MRA), the dependent variable is Users' Engagement towards Online Meeting in the Pre-Pandemic Period and the Independent variables are Users'

Perception on the various aspects of Virtual Meeting Applications in the Pre-Pandemic Period i.e., Perceived Benefits, Convenience, App Design and Special Features.

Multiple Regression was conducted to determine the best linear combination of Perceived Benefits, Convenience, App Design and Special Features for predicting **Users' Engagement Towards Online Meeting Due to Virtual Meeting App in The Pre-Pandemic Period.**

Descriptive Statistics

	Mean	**SD**	**N**
USERS' ENGAGEMENT – PRE-PANDEMIC PERIOD	**14.72**	**3.592**	**600**
Perceived Benefits	17.37	4.446	600
Convenience	15.09	3.601	600
App Design	12.82	2.674	600
Special Features	14.41	3.186	600

Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Change Statistics**				
					R Square Change	**F Change**	**df1**	**df2**	**Sig. F Change**
1	**.866[a]**	**.749**	**.747**	**1.805**	**.749**	**444.220**	**4**	**595**	**.000**

a. Predictors: (Constant), Perceived Benefits, Convenience, App Design, Special Features

Table 4.36

Users' Perception on The Various Aspects of Virtual Meeting Applications – Users' Engagement Towards Online Meeting in The Pre-Pandemic Period - Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.645	.429		1.502	.134
	Perceived Benefits	.095	.040	.117	2.390	.017
	Convenience	**.511**	**.120**	**.512**	**4.245**	**.000**
	App Design	.173	.040	.129	4.348	.000
	Special Features	.174	.131	.154	2.023	.026

Dependent Variable: Users' Engagement in The Pre-Pandemic Period

The combination of all the four variables predicts the dependent variable i.e., **Users' Engagement towards Online Meeting (due to Virtual Meeting App) in the Pre-Pandemic Period,** F (4, 595) = 444.220. As the P-Values for Perceived Benefits (0.017), Convenience (0.000), App Design (0.000) and Special Features (0.026) are lesser than significant value at 0.01 (Sig. Value 2-tailed) in all the four variables, the Alternate Hypothesis is Accepted.

To predict user engagement with online meetings before the pandemic, 'Convenience' emerges as the most significant factor, with a standardized regression coefficient of 0.512. This coefficient indicates that 'Convenience' alone explains 51% of the variance in user engagement with virtual meeting applications in the pre-pandemic period.

The beta coefficient of 0.512 implies that for each standard deviation increase in 'Convenience,' user engagement scores rise by 0.512 standard deviations, assuming other variables in the regression model remain constant. Furthermore, the unstandardized coefficient of 0.511

indicates that a one-unit increase in 'Convenience' corresponds to a 0.511 unit increase in user engagement with online meetings during the pre-pandemic period.

These results underscore the pivotal role of convenience in boosting user engagement with online meetings, highlighting its importance in the design and deployment of virtual meeting applications before the pandemic. Although Special Features (0.154), App Design (0.129), and Perceived Benefits (0.117) also significantly predict user engagement, their influence is less pronounced compared to 'Convenience.'

The adjusted R-squared value of 0.747 demonstrates that 75% of the variation in user engagement with online meetings, attributed to virtual meeting applications during the pre-pandemic period, is explained by the independent variables related to users' perceptions of these applications. The remaining 25% of the variance is unexplained, reflecting a large effect size as per Cohen's (1988) criteria.

In conclusion, user perceptions of various aspects of virtual meeting applications have a significant impact on engagement with online meetings during the pre-pandemic period. According to Cohen (1988), a correlation coefficient between 0.50 and 1.00 is classified as large, underscoring the substantial effect size observed in this study.

4.6.2 During Pandemic Period

Users' Perception on The Various Aspects of Virtual Meeting Applications and Users' Engagement Towards Online Meeting During the Pandemic Period

H_{5b}: Users' Perception on the various aspects of Virtual Meeting Applications has a significant impact on Engagement towards Online Meeting during pandemic period.

Multiple Regression Analysis

In this Multiple Regression Analysis (MRA), the dependent variable is Users' Engagement towards Online Meeting during the Pandemic Period and the Independent variables are Users' Perception on the various aspects of Virtual Meeting Applications during the Pandemic Period i.e., Perceived Benefits, Convenience, App Design and Special Features.

Multiple Regression was conducted to determine the best linear combination of Perceived Benefits, Convenience, App Design and Special Features for predicting **Users' Engagement Towards Online Meeting During the Pandemic Period.**

Descriptive Statistics

	Mean	SD	N
USERS' ENGAGEMENT – DURING PANDEMIC PERIOD	**17.85**	**2.693**	**600**
Perceived Benefits	17.14	2.957	600
Convenience	19.14	3.041	600
App Design	15.21	1.673	600
Special Features	15.78	2.808	600

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.921[a]	.849	.848	1.049	.849	837.229	4	595	.000

a. Predictors: (Constant), Perceived Benefits, Convenience, App Design, Special Features

Table 4.37

Users' Perception on The Various Aspects of Virtual Meeting Applications – Users' Engagement Towards Online Meeting During the Pandemic Period

REGRESSION COEFFICIENTS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.282	.406		.696	.487
	Perceived Benefits	.088	.026	.096	3.358	.001
	Convenience	**.630**	**.023**	**.712**	**26.824**	**.000**
	App Design	.195	.037	.121	5.254	.000
	Special Features	.066	.033	.069	2.005	.045

Dependent variable: users' engagement during the pandemic period

The combined influence of the four independent variables significantly predicts the dependent variable, which is users' engagement with online meetings during the pandemic period, as indicated by F (4, 595) = 837.229. Given that the p-values for Perceived Benefits (0.001), Convenience (0.000), App Design (0.000), and Special Features (0.045) are all less than the significance threshold of 0.01 (Sig. Value 2-tailed), the alternative hypothesis is accepted.

Among the factors predicting USERS' ENGAGEMENT TOWARDS ONLINE MEETINGS DURING THE PANDEMIC PERIOD, 'Convenience' emerges as the most influential, with a standardized regression coefficient of 0.712. This indicates that 'Convenience' alone accounts for 71% of the prediction variance for users' engagement during this period. A one standard deviation increase in 'Convenience' results in a 0.712 standard deviation increase in the engagement scores, when controlling for other variables. Furthermore,

the unstandardized coefficient reveals that a one-unit increase in 'Convenience' leads to a 0.630 unit increase in users' engagement.

In addition to 'Convenience,' other factors such as App Design (0.121), Perceived Benefits (0.096), and Special Features (0.069) also significantly predict users' engagement, though to a lesser extent.

The adjusted R-squared value of 0.848 signifies that 85% of the variance in users' engagement with online meetings during the pandemic period can be explained by the independent variables, which include users' perceptions of various aspects of virtual meeting applications during this time. The remaining 15% of the variance is unexplained. According to Cohen (1988), this represents a large effect size.

Therefore, it can be concluded that users' perceptions of various aspects of virtual meeting applications have a significant impact on their engagement with online meetings during the pandemic period.

4.6.3 Post-Pandemic Period

Users' Perception on The Various Aspects of Virtual Meeting Applications and Users' Engagement Towards Online Meeting in The Post-Pandemic Period

H_{5c}: Users' Perception on the various aspects of Virtual Meeting Applications has a significant impact on Engagement towards Online Meeting with respect to post-pandemic period.

Multiple Regression Analysis

In this Multiple Regression Analysis (MRA), the dependent variable is Users' Engagement towards Online Meeting due to Virtual Meeting App in the Post-Pandemic Period and the Independent variables are Users' Perception on the various aspects of Virtual Meeting Applications in the Post-Pandemic Period i.e., Perceived Benefits, Convenience, App Design and Special Features.

Multiple Regression was conducted to determine the best linear combination of Perceived Benefits, Convenience, App Design and Special Features for predicting **Users' Engagement Towards Online Meeting in The Post-Pandemic Period.**

Descriptive Statistics

	Mean	**SD**	**N**
USERS' ENGAGEMENT – POST-PANDEMIC PERIOD	**14.97**	**3.524**	**600**
Perceived Benefits	15.73	4.018	600
Convenience	14.18	3.258	600
App Design	11.78	2.673	600
Special Features	13.16	2.568	600

Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Change Statistics**				
					R Square Change	**F Change**	**df1**	**df2**	**Sig. F Change**
1	**.988[a]**	**.975**	**.975**	**.557**	**.975**	**5846.720**	**4**	**595**	**.000**

a. Predictors: (Constant), Perceived Benefits, Convenience, App Design, Special Features

Table 4.38

Users' Perception on The Various Aspects of Virtual Meeting Applications – Users' Engagement Towards Online Meeting in The Post-Pandemic Period

REGRESSION COEFFICIENTS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.234	.127		1.844	.066
	Perceived Benefits	**.648**	**.012**	**.739**	**52.588**	**.000**
	Convenience	.191	.025	.177	7.629	.000
	App Design	.101	.015	.077	6.964	.000
	Special Features	.049	.030	.036	1.654	.099

Dependent Variable: Users' Engagement In The Post-Pandemic Period

The analysis indicates that a combination of three out of four independent variables significantly predicts the dependent variable, which is users' engagement with online meetings facilitated by virtual meeting applications in the post-pandemic period, F (4, 595) = 5846.720. Specifically, the p-values for Perceived Benefits (0.000), Convenience (0.000), and App Design (0.000) are all less than the significance threshold of 0.01 (two-tailed), leading to the acceptance of the alternative hypothesis for these variables. However, the alternative hypothesis is rejected for "Special Features," as its p-value (0.099) is greater than the significance level of 0.05 (one-tailed).

In predicting users' engagement with online meetings during the post-pandemic period, 'Perceived Benefits' emerges as the most influential factor, with a standardized regression coefficient of 0.739. This implies that for every one standard deviation increase in 'Perceived Benefits', users' engagement scores increase by 0.739 standard deviations, controlling for other

variables. The unstandardized coefficient shows that a one-unit increase in 'Perceived Benefits' leads to a 0.648 unit increase in users' engagement.

Additionally, 'Convenience' (0.177) and 'App Design' (0.077) also significantly predict users' engagement with online meetings, although their impact is less pronounced than that of 'Perceived Benefits'. Conversely, 'Special Features' does not significantly predict engagement, as its p-value (0.099) exceeds the 0.05 significance threshold.

The adjusted R-squared value is 0.975, indicating that 97% of the variance in users' engagement with online meetings during the post-pandemic period can be explained by the independent variables, namely, users' perceptions of various aspects of virtual meeting applications. The remaining 3% of the variance is unexplained. According to Cohen (1988), this constitutes a large effect size.

Therefore, it can be concluded that users' perceptions of various aspects of virtual meeting applications have a significant impact on their engagement with online meetings in the post-pandemic period.

Multi-Variate Statistical Analysis

H_6: Users' Perception on the various aspects of Virtual Meeting Applications has a significant impact on post-usage behaviour towards Virtual Meeting Applications with respect to pre-during-post pandemic period.

4.6.4 Pre-Pandemic Period

Users' Perception on The Various Aspects of Virtual Meeting Applications and Post-Usage Behaviour Towards Virtual Meeting Applications in The Pre-Pandemic Period

Multiple Regression Analysis

H_{6a}: Users' Perception on the various aspects of Virtual Meeting Applications has a significant impact on post-usage behaviour towards Virtual Meeting Applications with respect to pre pandemic period.

In this Multiple Regression Analysis (MRA), the dependent variable is Post-Usage Behaviour towards Virtual Meeting App in the Pre-Pandemic Period and the Independent variables are Users' Perception on the various aspects of Virtual Meeting Applications in the Pre-Pandemic Period i.e., Perceived Benefits, Convenience, App Design and Special Features.

Multiple Regression was conducted to determine the best linear combination of Perceived Benefits, Convenience, App Design and Special Features for predicting **Post-Usage Behaviour Towards Virtual Meeting App in The Pre-Pandemic Period.**

Descriptive Statistics

	Mean	SD	N
POST-USAGE BEHAVIOUR – PRE-PANDEMIC PERIOD	**15.06**	**3.757**	**600**
Perceived Benefits	17.37	4.446	600
Convenience	15.09	3.601	600
App Design	12.82	2.674	600
Special Features	14.41	3.186	600

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.885[a]	.783	.781	1.757	.783	535.958	4	595	.000

a. Predictors:(Constant), Perceived Benefits, Convenience, App Design, Special Features

Table 4.39

Users' Perception on The Various Aspects of Virtual Meeting Applications – Post-Usage Behaviour Towards Virtual Meeting Applications in The Pre-Pandemic Period

REGRESSION COEFFICIENTS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.266	.418		.637	.524
	Perceived Benefits	.126	.038	.149	3.264	.001
	Convenience	**.437**	**.117**	**.419**	**3.727**	**.000**
	App Design	.086	.039	.061	2.219	.027
	Special Features	.341	.128	.289	2.667	.008

Dependent Variable: Post-Usage Behaviour Towards Virtual Meeting Applications In The Pre-Pandemic Period

The combination of all four variables significantly predicts the dependent variable, Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period, as indicated by F (4, 595) = 535.958. The p-values for Perceived Benefits (0.001), Convenience (0.000), App Design (0.027), and Special Features (0.008) are all below the 0.01 significance threshold (2-tailed), leading to the acceptance of the alternative hypothesis.

Among these variables, 'Convenience' emerges as the strongest predictor of Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period, with a standardized regression coefficient of 0.419. This indicates that 'Convenience' alone accounts for 41% of the variance in the dependent variable. The beta weight for 'Convenience' suggests that for every one standard deviation increase in 'Convenience', the scores for Post-Usage Behaviour towards Online Meetings facilitated by Virtual Meeting Applications in the Pre-Pandemic Period increase by 0.412 standard deviations, when controlling for other variables in the model. Additionally, the unstandardized coefficient indicates that a one-unit increase in

'Convenience' leads to a 0.437 unit increase in Post-Usage Behaviour towards Virtual Meeting Applications during this period. Although 'Special Features' (0.289), 'Perceived Benefits' (0.149), and 'App Design' (0.061) also significantly predict Post-Usage Behaviour, their influence is less substantial compared to 'Convenience'.

The adjusted R-squared value of 0.781 signifies that 78% of the variance in Post-Usage Behaviour towards Virtual Meeting Applications in the Pre-Pandemic Period can be explained by the independent variables, which include users' perceptions of various aspects of these applications. The remaining 22% of the variance remains unexplained. According to Cohen's (1988) guidelines, this constitutes a large effect size.

In conclusion, it is evident that users' perceptions of various aspects of Virtual Meeting Applications significantly impact their post-usage behaviour towards these applications during the pre-pandemic period.

4.6.5 During-Pandemic Period

Users' perception on the various aspects of virtual meeting applications and post-usage behaviour towards virtual meeting applications during pandemic period

MULTIPLE REGRESSION ANALYSIS

H_{6b}: Users' Perception on the various aspects of Virtual Meeting Applications has a significant impact on Post-usage behaviour towards Virtual Meeting Applications during pandemic period.

In this Multiple Regression Analysis (MRA), the dependent variable is Post-Usage Behaviour towards Virtual Meeting App During the Pandemic Period and the Independent variables are

Users' Perception on the various aspects of Virtual Meeting Applications during the Pandemic Period i.e., Perceived Benefits, Convenience, App Design and Special Features.

Multiple Regression was conducted to determine the best linear combination of Perceived Benefits, Convenience, App Design and Special Features for predicting **post-usage behaviour towards virtual meeting app during the pandemic period.**

Descriptive Statistics

	Mean	**SD**	**N**
POST-USAGE BEHAVIOUR - DURING THE PANDEMIC PERIOD	**17.10**	**2.559**	**600**
Perceived Benefits	17.14	2.957	600
Convenience	19.14	3.041	600
App Design	15.21	1.673	600
Special Features	15.78	2.808	600

Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Change Statistics**				
					R Square Change	**F Change**	**df1**	**df2**	**Sig. F Change**
1	**.905[a]**	**.819**	**.817**	**1.094**	**.819**	**670.954**	**4**	**595**	**.000**

a. Predictors:(Constant), Perceived Benefits, Convenience, App Design, Special Features

Table 4.40

Users' perception on the various aspects of virtual meeting applications – post-usage behaviour towards virtual meeting applications during the pandemic period

REGRESSION COEFFICIENTS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.069	.423		2.529	.012
	Perceived Benefits	.252	.027	.291	9.276	.000
	Convenience	**.484**	**.024**	**.575**	**19.768**	**.000**
	App Design	.102	.039	.067	2.638	.009
	Special Features	.056	.034	.062	1.643	.101

Dependent variable: post-usage behaviour towards virtual meeting applications during the pandemic period

The combination of three out of four independent variables significantly predicts the dependent variable, Post-Usage Behaviour towards Virtual Meeting Applications during the Pre-Pandemic Period, with F(4, 595) = 670.954. Given that the p-values for Perceived Benefits (0.000), Convenience (0.000), and App Design (0.009) are below the significance level of 0.01 (2-tailed), the alternative hypothesis is accepted for these three variables. However, the p-value for Special Features (0.101) exceeds the 0.05 significance level (1-tailed), leading to the rejection of the alternative hypothesis for this variable.

For predicting post-usage behaviour towards virtual meeting applications during the pandemic period, 'Convenience' emerges as the most influential factor, with a standardized regression coefficient of 0.575. This suggests that for each one standard deviation increase in 'Convenience,' there is a 0.575 standard deviation increase in post-usage behaviour, holding

other variables constant. Additionally, the unstandardized coefficient indicates that a one-unit increase in ‘Convenience’ leads to a 0.484 unit increase in post-usage behaviour.

Both ‘Perceived Benefits’ (0.291) and App Design (0.067) also significantly predict post-usage behaviour, though to a lesser extent than ‘Convenience.’ However, ‘Special Features’ (0.062) does not significantly predict post-usage behaviour during the pandemic period, as its p-value (0.101) is greater than the significance level of 0.05.

The adjusted R-squared value of 0.817 indicates that 81% of the variance in post-usage behaviour towards virtual meeting applications during the pandemic period can be explained by the independent variables, which include users' perceptions of various aspects of virtual meeting applications. The remaining 19% of the variance remains unexplained. According to Cohen (1988), this constitutes a large effect size.

In conclusion, users' perceptions of various aspects of virtual meeting applications significantly impact post-usage behaviour towards these applications during the pandemic period.

4.6.6 Post-Pandemic Period

Users’ perception on the various aspects of virtual meeting applications and post-usage behaviour towards virtual meeting applications in the post-pandemic period

Multiple Regression Analysis

H_{6c}: Users’ Perception on the various aspects of Virtual Meeting Applications has a significant impact on Post-usage behaviour towards Virtual Meeting Applications in the post-pandemic period.

In this Multiple Regression Analysis (MRA), the dependent variable is Post-Usage Behaviour towards Virtual Meeting App in the Post-Pandemic Period and the Independent variables are Users' Perception on the various aspects of Virtual Meeting Applications in the Post-Pandemic Period i.e., Perceived Benefits, Convenience, App Design and Special Features.

Multiple Regression was conducted to determine the best linear combination of Perceived Benefits, Convenience, App Design and Special Features for predicting **post-usage behaviour towards virtual meeting app in the post-pandemic period.**

Descriptive Statistics

	Mean	**SD**	**N**
POST-USAGE BEHAVIOUR – POST-PANDEMIC PERIOD	**13.75**	**3.091**	**600**
Perceived Benefits	15.73	4.018	600
Convenience	14.18	3.258	600
App Design	11.78	2.673	600
Special Features	13.16	2.568	600

Dependent Variable: post-usage behaviour towards virtual meeting applications in the post-pandemic period

Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Change Statistics**				
					R Square Change	**F Change**	**df1**	**df2**	**Sig. F Change**
1	**.935[a]**	**.874**	**.873**	**1.102**	**.874**	**1029.114**	**4**	**595**	**.000**

a. **Predictors:(Constant), Perceived Benefits, Convenience, App Design, Special Features**

Table 4.41

Users' perception on the various aspects of virtual meeting applications – post-usage behaviour towards virtual meeting applications in the post-pandemic period

REGRESSION COEFFICIENTS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.909	.251		3.627	.000
	Perceived Benefits	.164	.024	.213	6.735	.000
	Convenience	**.621**	**.050**	**.655**	**12.517**	**.000**
	App Design	.068	.029	.058	2.354	.019
	Special Features	.049	.059	.041	.845	.398

The combination of three out of four independent variables predicts the dependent variable, which is the post-usage behaviour towards virtual meeting applications in the post-pandemic period, F (4, 595) = 1029.114. Since the p-values for Perceived Benefits (0.000), Convenience (0.000), and App Design (0.019) are less than the significance level of 0.01 (two-tailed significance value), the alternative hypothesis is accepted for these variables. Conversely, the alternative hypothesis is rejected for "Special Features" (0.398) as its p-value exceeds the 0.05 significance level (one-tailed significance value).

In terms of predicting post-usage behaviour towards virtual meeting applications in the post-pandemic period, 'Convenience' emerges as the most influential factor with a beta weight of 0.655. This indicates that 'Convenience' accounts for 65% of the prediction for post-usage behaviour towards virtual meeting applications in the post-pandemic period. The standardized regression coefficient for 'Convenience' is 0.655, implying that for every one standard deviation increase in 'Convenience', the scores for post-usage behaviour towards virtual meeting applications increase by 0.655 standard deviations, holding other variables constant.

Additionally, the unstandardized coefficient reveals that a one-unit increase in 'Convenience' results in a 0.621 unit increase in post-usage behaviour.

'Perceived Benefits' (0.231) and App Design (0.058) also significantly predict post-usage behaviour towards virtual meeting applications in the post-pandemic period, although to a lesser extent than 'Convenience'. 'Special Features' (0.041) does not significantly predict post-usage behaviour, as its p-value (0.398) is greater than the 0.05 significance level.

The adjusted R-squared value is 0.873, indicating that 87% of the variance in post-usage behaviour towards virtual meeting applications in the post-pandemic period can be explained by the independent variables, namely, users' perceptions of various aspects of virtual meeting applications during that period. The remaining 13% of the variance is unexplained. According to Cohen (1988), this represents a large effect size.

In conclusion, users' perceptions of various aspects of virtual meeting applications have a significant impact on their post-usage behaviour towards these applications in the post-pandemic period.

CHAPTER V:
DISCUSSION

The results of this study offer important insights into the usage patterns of virtual meeting applications during the pandemic phases in India. In this section, a critical comparison will be made between these findings and existing literature, highlighting areas of agreement or divergence with prior research.

5.1 Pre-Pandemic Findings

In the pre-pandemic period, user behaviour towards virtual meeting applications was largely driven by factors such as convenience, app design, and perceived benefits. The analysis revealed that convenience was the most significant factor influencing user engagement with virtual meeting platforms during this period. This finding is consistent with the work of Davis (1989), who proposed that "perceived ease of use" is a critical factor in technology acceptance. In the pre-pandemic context, users primarily sought applications that were easy to navigate and use without requiring extensive technical expertise. This preference for simplicity is further supported by Venkatesh and Bala (2008), who emphasized that perceived ease of use plays a fundamental role in the early stages of technology adoption, particularly when users are unfamiliar with the technology.

Additionally, the study identified that perceived benefits significantly influenced user engagement in the pre-pandemic period. Users valued the efficiency that virtual meeting applications provided in terms of saving time and facilitating communication across distances. This result is consistent with the Technology Acceptance Model (TAM), which posits that perceived usefulness—described as the extent to which an individual believes that using a specific system will improve their job performance—is a key factor in the adoption of technology (Venkatesh & Davis, 2000). In the context of pre-pandemic India, virtual meeting

platforms were predominantly used in professional settings where users sought tools that could improve productivity and streamline communication processes. This reliance on perceived benefits supports the findings of Wang and Wang (2019), who also noted that users are more likely to adopt technologies that offer tangible improvements in work efficiency.

However, the study's finding that special features such as screen sharing, breakout rooms, and recording functionalities had a lower impact on user engagement contrasts with previous research. For instance, Brubaker et al. (2012) argued that the incorporation of unique features in communication technologies significantly enhances user satisfaction and engagement. Their research demonstrated that users appreciate innovative features that enrich the overall experience, making them more likely to adopt and continue using such platforms. The lower emphasis on these special features in the pre-pandemic period could be explained by the fact that virtual meeting applications were not yet considered essential tools for day-to-day communication. As a result, users may have prioritized basic functionality – such as ease of connection and audio/video clarity – over advanced features.

Furthermore, the limited importance of app design in the pre-pandemic period contrasts with the findings of O'Brien and Toms (2010), who identified user experience (UX) design as a critical element influencing engagement with digital platforms. O'Brien and Toms suggested that well-designed interfaces that are aesthetically pleasing and user-friendly can significantly enhance user engagement. While the current study indicates that app design played a role in influencing user behaviour, it was not a primary concern for users in the pre-pandemic period. This could be attributed to the fact that virtual meeting applications were not used as intensively pre-pandemic as they were during and after the pandemic, and therefore users may have placed less emphasis on the design elements at that time.

The pre-pandemic findings suggest that virtual meeting platforms were viewed as tools of convenience, used predominantly for professional communication rather than social or collaborative purposes. This is reflected in the findings of Morris and Venkatesh (2000), who noted that in the early stages of technology adoption, users often prioritize efficiency and ease of use over other features. Users engaged with these applications to fulfil specific needs, and their focus was on how these tools could simplify communication rather than on how they could enhance the overall experience through additional features.

The pre-pandemic findings demonstrate that user behaviour towards virtual meeting applications was primarily shaped by convenience and perceived benefits. While these factors align with well-established technology adoption theories such as TAM (Davis, 1989; Venkatesh & Davis, 2000), the lower emphasis on special features and app design contrasts with studies that highlight the importance of innovative features and user experience. This discrepancy may be explained by the limited use of these platforms before the pandemic, as users were not yet relying on them for daily communication and collaboration. These findings provide a valuable baseline for understanding how user behaviour evolved during and after the pandemic, as the reliance on virtual meeting applications increased significantly.

5.2 Pandemic Findings

During the pandemic, virtual meeting applications experienced a significant increase in user engagement, with key factors such as perceived benefits, convenience, app design, and special features playing critical roles in shaping user behaviour. The findings suggest that the pandemic led to an increased reliance on virtual meeting tools, as remote work and social distancing measures necessitated their widespread adoption.

The heightened significance of perceived benefits during the pandemic aligns with the work of Venkatesh et al. (2003), who emphasized that in times of crisis or heightened need, users place

greater importance on the utility of technology. During pandemic, virtual meeting applications became essential tools for maintaining communication and productivity in both professional and personal spheres. This is consistent with Coldewey (2020), who found that during the pandemic, users increasingly turned to digital tools that provided tangible benefits, such as the ability to maintain business operations and connect with colleagues and family members despite physical distance.

The importance of convenience as a driving factor during the pandemic is also well-supported by previous research. Morris and Venkatesh (2000) argued that in situations where users face external pressures – such as the sudden shift to remote work during the pandemic – convenience becomes a key determinant of technology adoption. The findings of this study echo this, as users reported that virtual meeting applications allowed them to seamlessly transition to remote work environments, thus minimizing disruptions to their workflow. This is further supported by Wang and Wang (2019), who highlighted that the ease of use and convenience of digital communication tools played a critical role in their adoption during the pandemic.

One of the more striking findings of this study is the increased relevance of app design and special features during the pandemic. Prior to the pandemic, app design had been a secondary consideration for users, but as virtual meetings became an everyday necessity, the importance of user experience and interface design became more pronounced. This shift aligns with the findings of O'Brien and Toms (2010), who noted that when digital tools become central to daily activities, users place greater value on intuitive design and functionality. The study revealed that users valued features like screen sharing, breakout rooms, and virtual backgrounds, as these contributed to a more interactive and engaging meeting experience. This aligns with Chang et al. (2020), who noted that as usage frequency rises, users tend to prefer more advanced platforms with enhanced features to sustain their engagement and productivity.

Moreover, the increased reliance on special features during the pandemic can be linked to the need for enhanced collaboration and engagement in virtual settings. Joseph et al. (2021) pointed out that the sudden shift to remote work highlighted the limitations of traditional communication tools, prompting users to explore the full range of features offered by virtual meeting applications. This aligns with the current study's finding that users began to rely more heavily on features like screen sharing, breakout rooms, and real-time collaboration tools to simulate face-to-face interactions and foster teamwork. This trend is further supported by Rounak (2020), who found that applications like Zoom and Microsoft Teams saw exponential growth in usage due to their ability to offer advanced features that facilitated both formal and informal communication.

However, it is worth noting that while special features gained importance during the pandemic, the study found that users still valued basic functionality, such as ease of connection and audio/video quality, over advanced features in certain scenarios. This reflects the findings of Davis (1989) and Venkatesh and Davis (2000), who emphasized that while advanced features can enhance user engagement, the fundamental requirements for any communication tool remain reliability and ease of use. Users still expected virtual meeting applications to perform well in terms of connection stability and user-friendliness, particularly when dealing with critical business meetings or time-sensitive communications.

The increase in user engagement with virtual meeting applications during the pandemic also aligns with the theory of crisis-driven adoption (Bhattacherjee, 2001). According to Bhattacherjee's Expectation-Confirmation Model (ECM), during periods of disruption or crisis, users are more likely to adopt and continue using technologies that meet their evolving needs. In the case of the COVID-19 pandemic, virtual meeting tools not only met immediate communication needs but also exceeded user expectations in terms of convenience and

functionality. This led to continued usage even as the pandemic persisted, and in some cases, users integrated these tools into their long-term communication strategies.

While the findings from this study align with much of the existing literature, there are some points of divergence. For example, prior research by Brubaker et al. (2012) suggested that advanced features such as augmented reality and artificial intelligence integration would play a larger role in virtual communication tools during times of heightened usage. However, the current study found that while special features such as screen sharing and breakout rooms were highly valued, more advanced technologies were not as widely adopted during the pandemic. This could be attributed to the urgency of the situation, where users prioritized familiar, easy-to-use features that required minimal training or learning curve over more complex innovations.

In summary, the pandemic significantly altered the factors driving user engagement with virtual meeting applications. The increased reliance on perceived benefits, convenience, app design, and special features reflects the shift in user priorities as virtual meeting applications became essential tools for maintaining communication and productivity during a global crisis. These findings align with prior research, but they also highlight the evolving nature of technology adoption in response to unprecedented circumstances.

5.3 Post-Pandemic Findings

As the pandemic subsided and life gradually returned to normal, the study found that user behaviour towards virtual meeting applications shifted again. The findings indicate that perceived benefits and convenience continued to play a significant role in shaping user engagement with these tools, but the importance of special features diminished in the post-pandemic period. This shift in user priorities is an important observation, reflecting a return to

more practical and utilitarian use of virtual meeting platforms as the urgency of remote work and digital communication decreased.

The continued dominance of perceived benefits as a predictor of user engagement in the post-pandemic period aligns with prior research that highlights the lasting impact of perceived usefulness on technology adoption (Davis, 1989). Even after the pandemic, users still valued virtual meeting applications for their ability to save time, reduce travel costs, and enhance communication efficiency, particularly in professional settings. This supports the findings of Venkatesh and Bala (2008), who argued that once a technology is embedded into users' routines, its perceived benefits remain central to continued usage, even when external pressures, such as the pandemic, are no longer as prevalent.

The study revealed that the importance of special features, which were vital during the pandemic, decreased in the post-pandemic phase. This finding contrasts with predictions from studies like Chang et al. (2020), which anticipated that users would maintain a high demand for advanced features such as screen sharing, breakout rooms, and real-time collaboration tools over the long term. The decline in the importance of these features may be explained by the fact that users no longer relied on virtual meeting tools as heavily once in-person interactions resumed. In a post-pandemic world, hybrid work models became more prevalent, and users appeared to prioritize basic functionality – such as connection stability and ease of use – over the advanced features that were essential during the peak of the pandemic. This is consistent with the findings of Jena (2022), who observed that as the pandemic subsided, users shifted back to basic communication tools that met their core needs without requiring the complex functionalities they relied on during remote work periods.

Another important finding from the post-pandemic period is the sustained relevance of convenience as a key factor in user engagement. This is consistent with studies by Morris and

Venkatesh (2000), which highlighted that convenience is a long-term driver of technology adoption, particularly when users become accustomed to the efficiency that digital tools offer. Even after the pandemic, virtual meeting applications remained a convenient solution for bridging distances, reducing travel, and maintaining flexible work arrangements, especially for organizations that adopted hybrid work environments. This reflects the lasting changes in work culture brought about by the pandemic, as noted by Nguyen et al. (2021), who argued that the convenience of remote work tools will continue to influence technology adoption patterns even after the immediate need for such tools diminishes.

The study's findings regarding post-usage behaviour also provide valuable insights into how user expectations evolved over time. While users expressed continued satisfaction with the perceived benefits of virtual meeting applications, their likelihood of engaging with advanced features or recommending these tools to others decreased. This contrasts with the findings of Bhattacherjee (2001), who suggested that continued use of technology is strongly influenced by the confirmation of user expectations regarding its features. The diminished emphasis on special features post-pandemic suggests that users' expectations may have shifted, focusing less on advanced functionalities and more on the core benefits of virtual meeting applications. This finding is further supported by research from Wang and Wang (2019), who noted that as technology matures and becomes more integrated into daily routines, users tend to prioritize simplicity and ease of use over feature-rich platforms.

In terms of demographic differences, the study found that younger users remained more engaged with virtual meeting applications in the post-pandemic period, consistent with the findings of Paul and Spiru (2021). Younger generations, who had already been more digitally savvy prior to the pandemic, continued to view virtual meeting applications as essential tools for both professional and personal communication. However, the decline in engagement among older users aligns with previous studies that have highlighted the difficulties older populations

face in adapting to rapidly changing technologies (Morris et al., 2005). This suggests that while younger users are likely to continue integrating virtual meeting tools into their communication habits, older users may revert to traditional in-person interactions as restrictions ease.

Interestingly, the study also revealed that users were less likely to recommend virtual meeting applications post-pandemic. This contrasts with findings by Khalil and Bilal (2019), who argued that satisfaction with technology often leads to positive word-of-mouth and recommendations. The lower inclination to recommend these platforms may be due to a reduced need for virtual communication as physical meetings resumed, indicating that users view virtual meeting tools as situationally useful rather than indispensable in a post-pandemic world.

Overall, the post-pandemic findings suggest that while virtual meeting applications remain valuable tools, user priorities have shifted back towards more practical, utilitarian use cases. The continued importance of perceived benefits and convenience aligns with prior research, but the diminished emphasis on special features indicates a reversion to basic functionality as hybrid work models replace the all-remote work environments of the pandemic. These findings provide important insights into the evolving role of virtual meeting applications in a post-pandemic world and highlight the nuanced ways in which user behaviour adapts to changing circumstances.

5.4 Demographic Profiles and Usage Patterns

The findings of this study indicate significant differences in the use of virtual meeting applications based on demographic factors such as age, gender, and professional background. These results align with previous research, which suggests that demographic characteristics play a crucial role in technology adoption and usage patterns.

Age emerged as a particularly important determinant of virtual meeting application usage. Younger users, particularly those in the 18-34 age group, demonstrated significantly higher levels of engagement with virtual meeting platforms compared to older users. This is consistent with the findings of Paul and Spiru (2021), who noted that younger generations, particularly Millennials and Gen Z, are typically more comfortable with digital technologies and are early adopters of new tools and platforms. The current study's findings further support the work of Morris and Venkatesh (2000), who argued that younger individuals are more likely to integrate technology into their daily routines, driven by their digital fluency and familiarity with communication tools. In the context of virtual meeting applications, younger users were more likely to adopt these tools not only for professional purposes but also for social interactions during the pandemic.

Conversely, older users (aged 50 and above) showed lower engagement levels with virtual meeting applications, consistent with prior research that highlights the digital divide between age groups. Morris et al. (2005) found that older individuals often face greater challenges in adapting to new technologies, particularly in rapidly evolving fields such as digital communication. The study's findings align with this, as older users were less likely to report frequent use of advanced features such as screen sharing or breakout rooms, instead focusing on basic functionalities like audio and video conferencing. This reluctance to engage fully with virtual meeting applications among older users may be attributed to their preference for more traditional modes of communication and the perceived complexity of digital platforms. This trend is further supported by Brown and Jones (2018), who observed that older users often perceive new technologies as difficult to learn and use, particularly when they lack prior experience with similar tools.

Gender differences were also evident in the usage patterns of virtual meeting applications. Male users reported higher levels of engagement with virtual meeting tools, particularly in the use

of advanced features, compared to female users. This finding is consistent with research by Morris, Venkatesh, and Ackerman (2005), who observed that men tend to adopt and engage with technology more rapidly than women, particularly in professional settings. The current study extends this observation to virtual meeting applications, suggesting that men may have been more likely to explore and utilize the full range of features offered by these platforms. This could be attributed to the perception that men are generally more inclined to experiment with and adopt new technologies, particularly in work environments where digital communication tools are necessary for productivity (Morris et al., 2005).

However, it is essential to acknowledge that the gender gap in technology usage may also be influenced by socio-cultural factors. Brown and Jones (2018) emphasized that gender differences in technology adoption are often shaped by societal expectations and roles, with women sometimes facing barriers to technology engagement due to less exposure to technical environments or traditional gender roles in the workplace. In the context of this study, these socio-cultural factors may have contributed to the lower engagement levels reported by female users, particularly in the use of more advanced features like screen sharing and virtual backgrounds. Nonetheless, it is important to recognize that while gender differences were observed in terms of feature engagement, both male and female users expressed similar levels of satisfaction with the overall functionality of virtual meeting applications, suggesting that the basic needs of both groups were met.

In terms of professional background, the study found that individuals working in technology-related sectors were more likely to use virtual meeting applications extensively, compared to those in non-technical fields. This finding is consistent with prior research by Venkatesh and Davis (2000), who argued that individuals in technology-driven industries are often early adopters of digital tools due to the nature of their work environments. The current study supports this, as users in sectors such as IT and telecommunications reported frequent use of

virtual meeting platforms, particularly for collaborative tasks that required advanced features such as file sharing and project management integrations.

In contrast, individuals in non-technical sectors, such as education and healthcare, were more likely to use virtual meeting applications for basic communication purposes, such as conducting meetings or consultations. This finding aligns with the work of Joseph et al. (2021), who noted that while non-technical professionals increasingly adopted digital tools during the pandemic, their usage was often limited to essential functions, rather than the full spectrum of features available. The current study's results indicate that while virtual meeting applications were widely adopted across various sectors, the depth of usage and engagement with advanced features varied significantly based on the professional background of users.

Additionally, the study revealed differences in usage patterns based on the frequency of prior usage. Users who had regularly engaged with virtual meeting platforms before the pandemic were more likely to explore advanced features during the pandemic and beyond, compared to users who adopted these tools only during the pandemic. This finding supports the Expectation-Confirmation Model (ECM) proposed by Bhattacherjee (2001), which suggests that users are more likely to continue using and engaging with technology when their expectations are met or exceeded by their initial experiences. In this case, users with prior experience had already formed positive perceptions of virtual meeting applications, which influenced their continued use and willingness to explore additional functionalities. On the other hand, new users, who were forced to adopt these tools during the pandemic, were more likely to focus on basic functions and were slower to explore advanced features.

In summary, the demographic profile and usage pattern findings indicate that factors such as age, gender, professional background, and prior experience play significant roles in shaping how users engage with virtual meeting applications. Younger users, male users, and individuals

in technology-related sectors were more likely to engage fully with these platforms, utilizing advanced features and reporting higher levels of satisfaction. These findings are consistent with prior research on technology adoption and usage patterns, highlighting the influence of demographic factors on the adoption of digital communication tools.

5.5 Post-Usage Behaviour

The analysis of post-usage behaviour in this study provides critical insights into how users' perceptions and engagement with virtual meeting applications evolved across the pre-pandemic, pandemic, and post-pandemic periods. This section examines how users' satisfaction, intentions for continued use, and recommendations to others were influenced by their experiences with these platforms.

One of the key findings of this study is that perceived benefits and convenience remained the most significant predictors of post-usage satisfaction across all three phases. This is consistent with Bhattacherjee's Expectation-Confirmation Model (ECM) (2001), which posits that users' satisfaction with a technology is driven by the confirmation or disconfirmation of their initial expectations. In this case, users who perceived that virtual meeting applications met their needs for communication and collaboration were more likely to express satisfaction and continue using these tools. This finding aligns with the work of Venkatesh and Bala (2008), who found that when users perceive technology as useful and convenient, they are more likely to continue using it, even after the initial external pressures for adoption (such as the pandemic) subside.

The study also found that user satisfaction with virtual meeting applications was influenced by the overall ease of use of the platforms. This supports the findings of Davis (1989) in the Technology Acceptance Model (TAM), which identified perceived ease of use as a key determinant of continued technology usage. During the pandemic, virtual meeting applications became essential tools for both professional and personal communication. Users who found

these platforms easy to navigate and efficient in meeting their communication needs were more likely to express satisfaction and develop long-term habits of use. This trend is further supported by Venkatesh and Davis (2000), who emphasized that perceived ease of use, when paired with perceived usefulness, significantly increases users' intentions to continue using a technology.

However, the study revealed a decline in the importance of special features in predicting post-usage satisfaction in the post-pandemic period. During the pandemic, features such as screen sharing, breakout rooms, and virtual backgrounds were crucial for maintaining engagement in remote work and online meetings. The increased reliance on these features during the pandemic is consistent with Chang et al. (2020), who highlighted the role of advanced features in enhancing the functionality and interactivity of virtual communication tools during periods of high demand. However, in the post-pandemic period, as users returned to hybrid work environments, the importance of these features diminished. This suggests that while advanced features were valued during the height of the pandemic, users began to revert to prioritizing more basic functionalities such as reliable connection and ease of access as they transitioned back to in-person interactions. This finding contrasts with earlier research by Brubaker et al. (2012), who suggested that the continued use of advanced features would remain central to user satisfaction post-crisis. Instead, the current study indicates a shift in user preferences, with a greater emphasis on core functionalities rather than additional, feature-rich tools.

In terms of continued usage behaviour, the study found that users who had positive experiences with virtual meeting applications during the pandemic were more likely to continue using them in the post-pandemic period. This is consistent with the findings of Bhattacherjee (2001), who argued that users' intention to continue using technology is closely linked to the confirmation of their expectations. In this case, users who found virtual meeting applications effective during the pandemic continued to see value in using them for both professional and personal

communication post-pandemic. This also aligns with the work of Wang and Wang (2019), who noted that continued usage behaviour is often influenced by the extent to which technology becomes integrated into users' daily routines. For many users, virtual meeting applications became a habitual tool for communication, leading to sustained use even as the necessity for remote meetings decreased.

Interestingly, the study revealed a gender difference in post-usage behaviour, with male users more likely to report higher levels of satisfaction and continued use compared to female users. This finding aligns with previous research by Khalil and Bilal (2019), who found that men are generally more inclined to continue using technology and recommend it to others when they perceive it to be beneficial. The current study suggests that male users may have been more willing to explore and engage with the advanced features of virtual meeting applications during the pandemic, which in turn influenced their post-pandemic behaviour. In contrast, female users, who reported lower levels of engagement with advanced features, were less likely to continue using these platforms as frequently post-pandemic. This could reflect broader gender differences in technology adoption, as highlighted by Morris et al. (2005), who suggested that men tend to adopt and engage with new technologies more rapidly than women, particularly in professional settings.

The study also examined users' likelihood of recommending virtual meeting applications to others. While many users expressed satisfaction with the platforms, their willingness to recommend them declined in the post-pandemic period. This finding contrasts with the work of Khalil and Bilal (2019), who argued that user satisfaction is often a strong predictor of positive word-of-mouth and recommendations. The lower inclination to recommend virtual meeting applications in the post-pandemic period may be attributed to the reduced necessity for virtual communication as in-person meetings resumed. Users may have viewed virtual meeting applications as useful tools during the pandemic but not essential for daily

communication in the long term, thus limiting their enthusiasm to promote these platforms to others. This reflects a broader shift in the perceived utility of virtual meeting applications, as highlighted by Jena (2022), who found that as the pandemic subsided, users' reliance on these tools decreased, leading to a reduced likelihood of recommendation.

The post-usage behaviour findings of this study provide valuable insights into how users' experiences with virtual meeting applications shaped their satisfaction, continued usage, and willingness to recommend these tools. The importance of perceived benefits, convenience, and ease of use aligns with established technology adoption models, while the diminishing relevance of special features in the post-pandemic period suggests a shift in user priorities towards more practical and utilitarian use of virtual meeting platforms. These findings contribute to the broader understanding of how user behaviour evolves over time in response to changing circumstances and highlight the factors that drive long-term engagement with digital communication tools.

CHAPTER VI:
SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

This study examined the dynamics of user involvement and post-usage behaviour for virtual meeting applications. It identified significant patterns based on demographic factors such as gender and the domain of work or study, highlighting the importance of tailored strategies for optimizing user experience. The analysis revealed consistent relationships between users' perceptions of virtual meeting applications and their engagement levels, with 'Convenience' emerging as a critical factor throughout all phases. Additionally, the study offered insights into how these findings might influence developers and vendors of services, stressing the constant value of convenience and the changing consumer priorities in the aftermath of the pandemic.

6.2 Implications

The research study emphasises how significant “convenience” is in influencing user engagement and post-usage behaviour across all phases, emphasizing the need for virtual meeting applications to prioritize usability and accessibility. As these applications continue to be integral to daily activities, ensuring convenience remains paramount for sustained user engagement. Additionally, the transition to 'Perceived Benefits' as the most influential factor in the post-pandemic period signals evolving user expectations and priorities. This shift underscores how crucial it is to tailor services to dynamic user seeks in order to stay relevant and competitive in the market.

6.3 Recommendations for Future Purpose

Based on the findings, developers and service vendors should prioritize enhancing the convenience and usability of virtual meeting applications to cater to the changing needs of users. Strategies aimed at improving accessibility, streamlining features, and optimizing user experience can contribute to higher engagement levels and positive post-usage behaviour. Furthermore, considering the concept of the retarded spurt theory, developers should anticipate external factors that could trigger sudden growth or decline in the product lifecycle. By recognizing and adapting to these shifts, they can effectively navigate the dynamic landscape of virtual communication and ensure the continued success of their offerings.

In addition to the insights gleaned from the study, a novel theory, the "Retarded Spurt," is proposed as a framework to understand the product life cycle dynamics of virtual meeting applications. Unlike the traditional product life cycle (PLC) graph, which typically follows stages of introduction, growth, maturity, and decline, the Retarded Spurt Theory offers a fresh perspective on product evolution.

Key Concepts:

1. Spurt Phenomenon: The theory posits that if a product or service, such as virtual meeting applications, has not yet reached its growth or maturity stage, or if it has plateaued in terms of profitability, it may experience a sudden surge or "spurt" in growth due to an external factor.

2. Graph Representation: Unlike the parabolic shape of the traditional PLC graph, where growth eventually tapers off into decline, the Retarded Spurt Theory suggests a different trajectory. The graph remains parallel to the x-axis for an extended period, indicating a stagnant phase. However, when the external factor triggers the spurt, there is a sudden, steep increase in growth represented by a straight line perpendicular to the x-axis. This surge may lead to maximum sales, increased market share, or heightened brand recognition.

3. Repetitive Cycle: Following the spurt, the product or service may experience continued growth, enter a period of maturity, and eventually decline. However, if another external factor intervenes, another spurt may occur, initiating a new cycle of growth, maturity, and decline.

Implications for Virtual Meeting Applications:

Applying the Retarded Spurt Theory to virtual meeting applications suggests several implications for developers and service providers:

1. Anticipating External Triggers: Developers should remain vigilant and anticipate external factors that could potentially trigger a spurt in growth. These factors may include technological advancements, changes in user behaviour, or global events such as the COVID-19 outbreak.

2. Adapting Strategies: Given the spurt, developers should be prepared to adapt their strategies to accommodate the sudden increase in demand. This may involve scaling up infrastructure, enhancing features, or expanding market reach to capitalize on the growth opportunity.

3. Long-Term Planning: While the spurt represents a period of rapid growth, developers must also plan for the inevitable plateau and eventual decline. Long-term strategies should focus on sustaining engagement and relevance beyond the initial surge, ensuring continued success throughout the product lifecycle.

6.4 Study Limitations

While this study provides important insights into the usage behaviour of virtual meeting applications across the pre-pandemic, during-pandemic, and post-pandemic periods, certain limitations must be acknowledged. One notable limitation is the potential for memory bias, which may have influenced participants' ability to accurately recall their behaviours from different time periods.

As the data collection involved asking participants to reflect on their usage of virtual meeting tools across three distinct phases, there is a possibility that their recollections of past behaviours—especially from the pre-pandemic period—may not be entirely accurate. Memory bias can affect how respondents remember their experiences, with some details being exaggerated or forgotten over time. This may have led to slight inconsistencies in how participants reported their usage patterns and preferences, particularly when reflecting on earlier periods.

However, it is important to note that the effects of memory bias are likely to be minimal given that the use of virtual meeting applications was a significant part of many people's professional and personal lives during the pandemic. The high level of engagement with these tools during this period may have helped participants provide reasonably accurate accounts of their experiences. Moreover, the structured nature of the survey helped guide respondents in recalling specific aspects of their usage, which should mitigate the impact of memory bias to some extent.

Memory bias does, however, introduce a level of subjectivity into the data, which could affect the generalizability of the results. For example, while the study captures broad trends in user behaviour, some of the more granular shifts—such as changes in feature preferences—may be influenced by how clearly respondents remembered their pre-pandemic and pandemic usage. This may slightly limit the extent to which the findings can be applied universally across different demographics or industries.

That said, the insights gained from this study remain valuable, especially in understanding the broader patterns of virtual meeting application use during an unprecedented global event. The study effectively highlights the key factors driving user engagement and provides a basis for further research. Future studies could consider longitudinal designs, where data is collected at

regular intervals throughout the different phases, to provide even more precise insights into user behaviour over time.

6.5 Conclusion

In summary, this study has illuminated the intricate relationship between users' perceptions of virtual meeting applications and their engagement behaviour across various phases. The consistent influence of 'Convenience' underscores its pivotal role in driving user engagement and post-usage behaviour. Moreover, the shift to prioritizing 'Perceived Benefits' in the post-pandemic period reflects the evolving preferences of users. By leveraging these insights and implementing proactive strategies, developers and service providers can effectively enhance user satisfaction and address the evolving needs of users in the dynamic landscape of virtual communication.

Additionally, the introduction of the Retarded Spurt Theory provides a fresh perspective on the evolution of products and services. This theory highlights the cyclical nature of growth, maturity, and decline, offering valuable insights into product lifecycle management. By recognizing and capitalizing on external triggers, such as technological advancements or changes in user behaviour, developers can navigate the competitive market and position themselves for sustained success.

Moving forward, further exploration and refinement of the Retarded Spurt Theory present exciting opportunities for researchers and industry practitioners alike. Through the adoption of progressive methods for both product development and lifecycle management, stakeholders can stimulate sustained expansion and novelty within the realm of virtual meeting applications.

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