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Digital Divine during Crises: Spirituality-related Technology Use as a Coping Mechanism in India

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Abstract

Background: The use of technology during crises presents a paradox. While it heightens anxiety through information overload and misinformation, it simultaneously serves as a primary avenue for spiritual solace. Meanwhile, research suggests that individuals with low levels of spiritual well-being are more susceptible to technology addiction. This study draws on the transactional model of stress and coping and the cybernetic theory of stress to investigate the following research question: How does the use of technology during a crisis—both for information search and spirituality—relate to users' ability to (i) cope with the crisis, (ii) build post-crisis resilience, and (iii) address problematic technology use? The use of technology for spirituality during crises is conceptualized here as a self-selected, technology-mediated positive psychology intervention.

Methods: An online survey was conducted in India (N=443) during the coronavirus (COVID-19) pandemic. The analysis involved partial least squares structural equation modeling (PLS-SEM).

Results: During the pandemic, using technology to obtain COVID-19-related information was a positive predictor of anxiety, which in turn was negatively related to technology use for spirituality. Nonetheless, technology use for spirituality was positively related to the sense of coping, which was negatively related to problematic technology use. This sense of coping was also positively related to future life optimism, a key indicator of post-crisis resilience.

Conclusions: The study advances the understanding of how technology use during a crisis can translate into long-term resilience. Theoretically, it identifies a boundary condition for the cybernetic theory of stress, where high anxiety may inhibit the initiation of digital coping. Practically, the study highlights the role of techno-spirituality as an indigenous digital public infrastructure for well-being in the Asia-Pacific. While the field of positive psychology is well-established, this study raises the visibility of the nascent field of positive technology within the literature on human-technology interaction and information systems.

Keywords: Digital Coping, Digital India, Positive Technology, Problematic Internet Use, Techno-spirituality.

Introduction

Spirituality is widely recognized as a key coping resource for individuals facing traumatic experiences (Meena et al., 2020; Wiederhold, 2020). While some scholars define spirituality as surrendering to a higher power, exercising faith, or consulting religious advisors (Rodda et al., 2018), others view it as a quest for meaning and purpose that provides a sense of peace, harmony, hopefulness, and compassion for others and oneself (Pruzan, 2011; Thoresen & Harris, 2002). Whether or not it is concerned with religion, spirituality is often associated with the thinning out of the ego (Bhargav et al., 2015; Pruzan, 2011). For the purposes of this study, spirituality broadly refers to a view of life that transcends material well-being and is independent of one's religion. It is something that offers people a larger framework to understand their suffering, thereby enabling them to make sense out of crises (Bhargav et al., 2015; Giannelia & Golub, 2025; Goldschmidt, 2020; van Tongeren et al., 2020).

The use of information systems and digital technologies (henceforth simply referred to as 'technology') for spirituality has been on the rise in recent years. Spiritually inspiring messages promoting self-transcendence are regularly created, liked, commented upon, and shared across online networks (Williams & Krisjanous, 2023). The consumption of spiritual videos and livestreamed programs is also widespread (Goldschmidt, 2020). This phenomenon, known as the 'digital divine,' highlights the transformative impact of technology on spiritual practices (Katoch & Rana, 2023; Meena et al., 2020). It encompasses digital ecosystems that support techno-spiritual practices, including the digitalization of traditional activities such as spiritual learning as well as communication between spiritual leaders or organizations and their communities (Giannelia & Golub, 2025). In countries like India, it is common for major spiritual events to support livestreaming and facilitate virtual participation (Himatsingka, 2019; Suman, 2020). Spiritual teachers such as Gaur Gopal Das and Sadhguru are followed by millions on social media (Rebecca, 2025).

In particular, during crises, people's willingness to resort to spirituality as a coping mechanism increases (Partouche-Sebban et al., 2021). Large-scale public disasters that affect wider society create a fertile ground for spirituality-related technology use, which has the potential to address the need for values such as happiness, fulfilment, meaning, and a sense of community (Giannelia & Golub, 2025; Wiederhold, 2020; Williams & Krisjanous, 2023). Simultaneously, crises prompt people to search online frantically to make sense of their situation (Starcevic, 2017; Yang et al., 2025). This creates a paradox: the same technology used for information-seeking, which can often heighten anxiety through overload and misinformation, is the primary avenue that people turn to for spiritual solace. The question of how these two distinct behaviors—technology use for spirituality and information search—coexist during a crisis remains empirically elusive.

Addressing this knowledge gap carries significant implications for public health policy, technology design, and spiritual leadership. If techno-spiritual practices buffer the negative psychological impacts of crises, public health organizations could promote digital coping resources, while tech companies might redesign platforms to better support user well-being in times of distress. Plugging this gap could also be significant for spiritual organizations, as it could provide them with insights on how to effectively use digital channels to support their communities. Furthermore, closing this gap could help address 'problematic technology use,' a global public health concern (Stănculescu & Griffiths, 2024). Previous research has only serendipitously touched upon the connection between spirituality and problematic technology use. For example, some studies note that individuals with low levels of spiritual well-being are more susceptible to technology addiction (Shim, 2019), and that some people resort to spirituality to control their technology use (Shi et al., 2019). While technology use has been linked to both negative outcomes like task distraction (Cui et al., 2024) and positive ones like improved well-being (Albashrawi et al., 2022), no research has yet systematically studied the extent to which techno-spirituality functions as an immediate coping buffer during a crisis, fosters post-crisis resilience, and acts as a corrective mechanism to mitigate problematic technology use.

Therefore, by synthesizing these elements into a cohesive theoretical model, this study investigates the following overarching research question: *How does the use of technology during a crisis—both for information search and spirituality—relate to users' ability to (i) cope with the crisis, (ii) build post-crisis resilience, and (iii) address problematic technology use?* For the purposes of this study, technology encompasses any social media platform, personal messaging application, or videoconferencing tool. Spirituality-related technology use refers to the use of one or more of these channels to engage with content focused on transcending material well-being for greater peace and happiness (Pruzan, 2011; Thoresen & Harris, 2002; Wiederhold, 2020; Williams & Krisjanous, 2023).

The context of the coronavirus (COVID-19) pandemic was chosen for investigation for two reasons. First, it significantly influenced the lives of everybody in unforeseeable ways with constant reminders of death (Lu

et al., 2021; Partouche-Sebban et al., 2021). The health crisis was matched by an equally deadly economic crisis, the worst since World War II (Nicola et al., 2020; Tarhini et al., 2022). The magnitude of the disruption to life took a tremendous toll on people's sense of well-being (Goldschmidt, 2020; Riva et al., 2020). The pandemic-related online information overload, referred to as the infodemic, further aggravated people's anxiety (Zarocostas, 2020). Amid such stressful circumstances, spirituality was an apt coping mechanism (Koenig, 2020; Wolf et al., 2024). After all, the very purpose of spirituality is to help people during difficult times (Meena et al., 2020; Wiederhold, 2020).

Second, while the volume of Google searches for 'prayer' jumped exponentially in March 2020 when the coronavirus was spreading aggressively across the globe (Wiederhold, 2020), lockdowns during the pandemic meant that people were physically separated from their faith communities and spiritual networks. To meet people's spiritual thirst, several places of worship and spiritual organizations increased their digital presence (Katoch & Rana, 2023). These ranged from livestream on Facebook to spiritual discourse on YouTube. For example, the Pope took part in several livestream services from the Vatican in Rome, and these were made available online (Goldschmidt, 2020). Therefore, this study seeks to better understand the degree to which technology use for spirituality was helpful as a coping mechanism in the wake of the COVID-19 outbreak, and how it could predict individuals' post-pandemic life optimism and problematic technology use.

The study is significant on three fronts. First, it responds to the call for focused human-technology interaction research on techno-spiritual practices (Wolf et al., 2024) and the role of spiritual information processing experiences in times of distress (Caidi et al., 2026). In so doing, it adds to the emerging literature on the growing phenomenon of the digital divine (Katoch & Rana, 2023; Meena et al., 2020). By examining this within the Indian context, the study situates itself within the core research clusters identified in the Pacific Asia Journal of the Association for Information Systems (PAJAIS) knowledge profile study (Jiang et al., 2019), specifically those focused on 'human behavior and information systems' and 'cultural and global issues in information systems'. It further aligns with recent PAJAIS scholarship identifying prevention and health management as a paramount research direction in the digital health industry (Guo et al., 2025) and contributes to the 'better information systems for the future' research stream (Tarhini et al., 2022) by investigating technology-mediated spiritual practices as a transformative, preventive coping mechanism.

Second, the study addresses the tension between technology use and individual outcomes, a recurring theme in recent Asia-Pacific information systems literature. While Cui et al. (2024) demonstrate that personal social media ubiquity can lead to negative stressors like diminished job performance, and Albashrawi et al. (2022) emphasize that a digital-healthy society requires understanding the emotional mechanisms influencing well-being, this study shifts the focus to techno-spirituality as a proactive buffer. Rooted in the transactional model of stress and coping (Lazarus & Folkman, 1984; Wolfers & Schneider, 2021) and the cybernetic theory of stress (Carver & Scheier, 1982; Cummings & Cooper, 1979; Edwards, 1992), the study enriches the scholarly understanding of how individuals leverage technology for spirituality to cope with a crisis, and how that can translate into post-crisis resilience.

Third, the study advances the nascent field of positive technology, which explores how the use of technology fosters personal growth and human virtues (Botella et al., 2017). While positive technology is directly inspired by the field of positive psychology that seeks to study human strengths and virtues (Seligman, 2011; Seligman & Csikszentmihalyi, 2000), it remains a comparatively under-developed area (Riva et al., 2020). This study, therefore, aspires to add impetus to its growth and bridge the gap between positive psychology and information systems.

Theoretical Background

The personal use of technology during crises is a double-edged sword. On the one hand, it can empower individuals by serving as a useful source of information (Oh et al., 2013; Pal & Banerjee, 2021). This, in turn, can help them alleviate situational uncertainty. The use of technology can also provide social support, thereby helping individuals cope with stress and anxiety (Banerjee et al., 2025; Chen & Lemmer, 2025; Wolfers & Utz, 2022). On the other hand, using technology during crises can also turn out to be a source of distress (Yang et al., 2025). This is because technology is usually inattentive to the needs of people experiencing traumatic life-changing events, thus exposing them to more sources of harm and stress. Information overload and misinformation further exacerbate the problem (Oh et al., 2013; Zarocostas, 2020), suggesting that the outcomes of technology use hinge largely on how individuals manage their engagement.

To balance these competing forces and make the most of technology amid crises, self-regulation is clearly necessary. Therefore, this study draws on the transactional model of stress and coping and the cybernetic

theory of stress. According to the transactional model of stress and coping (Lazarus & Folkman, 1984; Wolfers & Schneider, 2021), stress is experienced when the intensity of stressors exceeds the available cognitive resources. Individuals strive to manage the dynamic interplay between stressors and resources to effectively leverage coping tools and strategies. Technology can play three concurrent roles in this seesaw of stressors and resources (Wolfers & Utz, 2022). First, stress can trigger technology use. Second, technology use can trigger anxiety. Third, technology use can provide resources that buffer stress. This seesaw effect is particularly evident in recent PAJAIS scholarship, which highlights that while digital ubiquity in the region can drive negative outcomes like distraction (Cui et al., 2024), it also provides the necessary emotional mechanisms to move toward a digital-healthy society (Albashrawi et al., 2022).

Furthermore, according to the notion of cybernetics, humans self-regulate their own behaviors dynamically during times of distress (Carver & Scheier, 1982). Specifically, the cybernetic theory of stress posits that humans strive to distance themselves from stressful stimuli and influence their environments in a manner that would reduce the intensity of such stimuli (Cummings & Cooper, 1979; Edwards, 1992). In other words, stressful stimuli serve as an anti-goal. It prompts a behavioral change that will seek to increase the distance between humans and the anti-goal. This distancing constitutes the discrepancy-enhancing mechanism.

Along with this, a discrepancy-reducing mechanism is also at play. Through this, the goal is to bring the actual state close to the desired state (Carver, 2006). Increasing the distance from an undesired state or anti-goal and reducing the distance to a new desired state or goal reflects a coping process whereby individuals act to attenuate the effects of a threatening stimulus (Carver, 2006; Cummings & Cooper, 1979; Stich et al., 2019), which is the pandemic and its associated infodemic in this context.

Both the transactional model of stress and coping (Lazarus & Folkman, 1984; Wolfers & Schneider, 2021) and the cybernetic theory of stress (Carver, 2006; Carver & Scheier, 1982; Cummings & Cooper, 1979) suggest that coping during crises is a complex phenomenon. Focusing specifically on coping during crises through technology, this study argues that spirituality-related technology use could have been a key coping strategy during the pandemic because it serves as a critical resource (transactional model of stress and coping) that allows distancing from the anti-goal (cybernetic theory of stress). Technology might have enabled people to address the psychological consequences of the pandemic at three levels: hedonic, eudaimonic, and interpersonal. The hedonic level encompasses the use of technology to induce positive and pleasant experiences, the eudaimonic level has to do with reaching engaging and self-actualizing experiences, and the interpersonal level is about social integration and connectedness (Riva et al., 2020; Stănculescu & Griffiths, 2024). All three levels of support could be obtained through technology use for spirituality during the pandemic. At a hedonic level, people could use technology to learn about mindfulness meditation, which helps reduce stress and improve quality of life. At a eudaimonic level, they could use technology to attend online well-being training so as to develop strength and resilience. At an interpersonal level, they could use technology for exchanging their spiritual beliefs and thoughts, thereby developing social bonds (Koenig, 2020; Riva et al., 2020).

Overall, based on these theoretical perspectives, this study hypothesizes that COVID-19-related information obtained from online channels would be positively related to anxiety (H1). Hence, individuals would regulate their use of technology. To increase distance from the undesired state (discrepancy-enhancing), they would make use of technology for spirituality (H2), a well-established coping mechanism during difficult times (Koenig, 2020; Meena et al., 2020; Wiederhold, 2020). This will give rise to a new desired state of coping (discrepancy-reducing, H3) that will have a negative association with problematic technology use in the short-term (H4). In the long term, it will also predict future technology use intention for spirituality, future anticipated problematic technology use, and future life optimism in general (H5). The detailed hypotheses development is presented next.

Hypotheses Development

Role of Technology Use for Information Seeking during a Crisis

Technological advancements, coupled with widespread internet access, have made information more accessible to the public than ever before. While this offers obvious benefits, the use of technology to look for information during a crisis also has the potential to elevate anxiety (Pal & Banerjee, 2021; Yang et al., 2025). To this end, the notion of cyberchondria could be brought to bear. It refers to the abnormal behavioral pattern of spending excessive time online, often with repeated searches for health information that can heighten one's sense of distress and anxiety (Starcevic, 2017; Yang et al., 2025).

Cyberchondriac tendencies are particularly common during situations of ambiguity, where individuals are left questioning the veracity of information (Pal & Banerjee, 2021; Yang et al., 2025). The pandemic, a global public health emergency, was conceivably fraught with medical uncertainty that would have lured people into excessive and repeated online searches (Starcevic, 2017; Yang et al., 2025). Accordingly, increased use of technology to seek information about the pandemic is expected to raise individuals' anxiety levels. Hence, the following hypothesis is posited:

H1: Using technology to obtain information on a crisis is positively related to anxiety about the crisis.

Role of Crisis-Related Anxiety

When individuals experience high levels of anxiety, they are anticipated to take steps to increase their distance from the anxious state. This stems from the discrepancy-enhancing mechanism of the cybernetic theory of stress (Carver, 2006; Carver & Scheier, 1982; Cummings & Cooper, 1979; Edwards, 1992). The pandemic obviously created a stressful environment with constant reminders of death. To cope with this anxiety, several individuals adopted spirituality (Koenig, 2020; Partouche-Sebban et al., 2021).

However, pandemic lockdowns necessitated physical distance from faith communities and spiritual networks. Consequently, the use of technology for spirituality became the primary recourse (Goldschmidt, 2020). It is possible that heightened anxiety led to a greater adoption of technology for spiritual purposes, promoting engagement with online content emphasizing peace and happiness beyond material welfare (Partouche-Sebban et al., 2021; Williams & Krisjanous, 2023). Hence, the following hypothesis is posited:

H2: Crisis-related anxiety is positively related to technology use for spirituality.

Role of Technology Use for Spirituality

Spirituality has long been established as a crucial resource in managing life's challenges (Comstock & Partridge, 1972). Spiritual engagement, such as service attendance, praying, and reading scriptures (e.g., the Bhagavad Gita, the Bible, and the Holy Quran), consistently correlates with positive health outcomes, including lower health-related worries (Harris et al., 1995), effective recovery from psychological disorder (Saged et al., 2020), and improved self-esteem (Harris et al., 1995). Personal spirituality is also inversely associated with adverse behaviors like depression, alcohol abuse, and addictions (Barton & Miller, 2015; Yonker et al., 2012).

Similarly, technology use serves as a vital coping mechanism during distress. It aids in alleviating acculturative stress (Banerjee et al., 2025), helps adolescents manage loneliness (Cauberghe et al., 2021), and is positively associated with life satisfaction and subjective well-being in older adults (Ractham et al., 2022). The use of technology during stressful events can facilitate both problem-focused and emotion-focused coping (Chen & Lemmer, 2025; Wolfers & Schneider, 2021).

Given that both spirituality and technology use function as independent coping resources, the convergence of the two—technology use for spiritual purposes—should also be an effective coping strategy. In the context of the transactional model of stress and coping, this activity serves as a critical cognitive resource that helps manage the imbalance between stressors and coping abilities (Lazarus & Folkman, 1984; Wolfers & Schneider, 2021; Wolfers & Utz, 2022). Furthermore, this resource application provides a discrepancy-reducing mechanism by bringing the individual's actual emotional state closer to the desired state of peace and control (Carver, 2006; Carver & Scheier, 1982; Cummings & Cooper, 1979; Edwards, 1992; Wiederhold, 2020). This use of technology for spirituality has been suggested as an effective step to mitigate anxiety and facilitate trauma transcendence (Koenig, 2020; Wiederhold, 2020). Hence, the following hypothesis is posited:

H3: Technology use for spirituality is positively related to the sense of coping associated with the crisis.

Role of Crisis-Related Sense of Coping

Problematic technology use is usually exacerbated by internal distress states such as anxiety, depression, fear of missing out, loneliness, and general stress (Erhel et al., 2024; Stănculescu & Griffiths, 2024). During the pandemic-induced lockdowns, individuals' screentime and problematic technology use conceivably soared (Erhel et al., 2024). However, amid such challenging circumstances, their sense of coping and problematic technology use should exhibit an inverse relationship (Cauberghe et al., 2021).

If individuals experienced a high sense of coping despite the situational turbulence, their reliance on maladaptive escape behaviors such as binge-watching or compulsive information seeking could be lowered (Hollis et al., 2017). In terms of the cybernetic theory of stress, a high sense of coping represents the achievement of a desired state (Carver, 2006; Carver & Scheier, 1982; Cummings & Cooper, 1979; Edwards, 1992). Consequently, the discrepancy-reducing mechanism will likely promote self-regulatory behavior to sustain this state. Hence, the following hypothesis is posited:

H4: The sense of coping associated with the crisis is negatively related to problematic technology use.

Furthermore, individuals' motivation to bring their current state closer to a desirable one—as dictated by the cybernetic theory of stress—is expected to be stable over time (Carver, 2006; Carver & Scheier, 1982; Wolfers & Utz, 2022). The successful achievement of a desired state should reinforce the behavior that led to the success. Thus, once individuals develop a strong sense of coping by using technology for spirituality amid the pandemic, the behavior is likely to persist and become a preferred coping strategy in the future (Carver, 2006; Carver & Scheier, 1982; Cummings & Cooper, 1979; Hollis et al., 2017).

In addition, the heightened sense of coping could have broader, long-term psychological benefits (Okun et al., 2006; Wolfers & Utz, 2022). Using technology for spirituality can be viewed as a self-selected, positive psychology intervention (Hendriks et al., 2021). Positive psychology interventions are known to facilitate post-traumatic growth, mental well-being, and psychological resilience, which fundamentally underpin life optimism (Hendriks et al., 2021; van Tongeren et al., 2020). Moreover, the sustained self-regulatory capacity developed through effective coping should reduce the future likelihood of engaging in maladaptive behaviors like problematic technology use (Chen & Lemmer, 2025; Hollis et al., 2017). The literature also suggests that spirituality helps keep problematic technology use at bay (Albashrawi et al., 2022; Shi et al., 2019; Shim, 2019; Wood et al., 2016). Bearing the foregoing, the following three-pronged hypothesis is posited:

H5: The present sense of coping associated with the crisis is (a) positively related to technology use intention for spirituality in the future, (b) positively related to future life optimism, and (c) negatively related to anticipated problematic technology use in the future.

The proposed theoretical model is shown in Figure 1, where the hypothesized relations are denoted using solid arrows. The empirical analysis of the model will statistically control for the effects of (1) the past technology use for spirituality on the present technology use for spirituality, (2) the present technology use for spirituality on the future technology use intention for spirituality, (3) the past problematic technology use on the present problematic technology use, and (4) the present problematic technology use on the anticipated problematic technology use in the future. These four relations are denoted using dashed arrows.

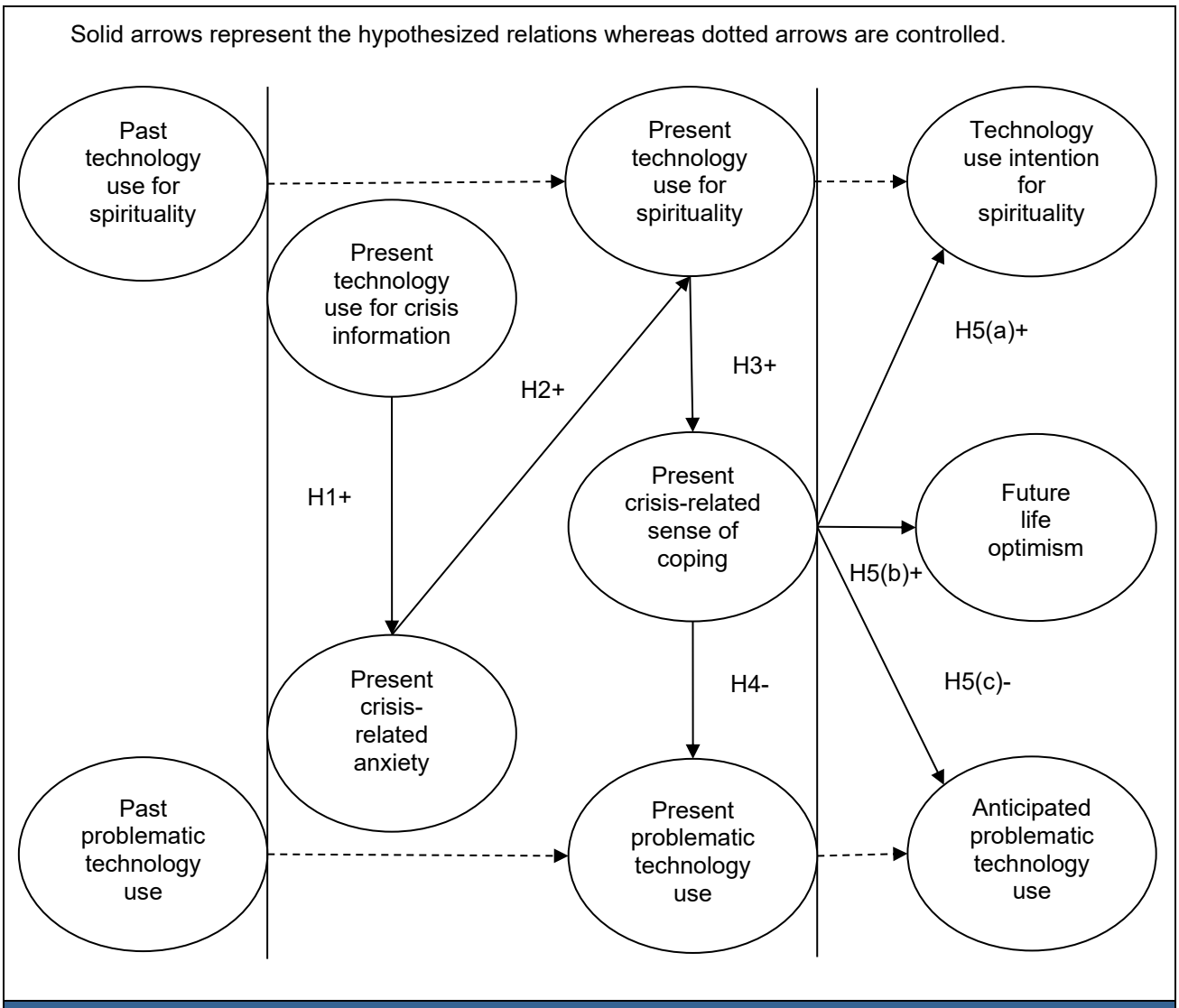

Figure 1 – Theoretical Model

Methodology

Research Design

After obtaining approval from the ethics committee at the authors' institution, an online survey was conducted. A three-wave longitudinal study spanning pre-, during, and post-pandemic periods would have been optimal. However, this study was initiated after the onset of the COVID-19 pandemic. This rendered pre-pandemic data collection impossible. Furthermore, the unpredictable trajectory of the pandemic precluded a planned three-wave research design.

Consequently, the choice of conducting a cross-sectional survey represents a pragmatic compromise, acknowledging the inherent constraints imposed by the pandemic's timing and uncertainty. This approach aligns with prior research that has successfully employed cross-sectional designs to examine constructs such as future life optimism and future thinking (e.g., Sjåstad & Baumeister, 2023; Spatz et al., 2023; Turja et al., 2022).

Data Collection

As indicated earlier, the research question of this study is: How does the use of technology during a crisis—both for information search and spirituality—relate to users' ability to (i) cope with the crisis, (ii) build post-crisis resilience, and (iii) address problematic technology use? To address this question, it was essential to

recruit participants who used technology for both information search and spirituality during the pandemic. While individuals who primarily use technology for general information search may not frequently engage in spiritual content, those who use technology for spiritual purposes are highly likely to also use it for information search. Therefore, this study specifically targeted a sample of individuals who use technology for spirituality to ensure a higher probability of capturing the desired dual-usage behavior.

Participants were recruited from India, a spiritually rich nation that has consistently been ranked among the top three countries on the Global Spirituality Index (Wayfairer Travel, 2023). Around 60% of tourism in India is connected to spirituality, with major spiritual events and pilgrimages attracting large numbers of travelers annually (Srivastava, 2024). In the wake of the COVID-19 outbreak, spiritual identification in India was particularly linked to people's coping skills (Kusuma et al., 2025; Wiederhold, 2020). During the pandemic, televised spiritual epics such as the Ramayana engaged Indian viewers on online platforms (Dua & Siwach, 2025). Perhaps unsurprisingly, prior research on the use of technology for spirituality has often chosen India for data collection (Katoch & Rana, 2023; Kusuma et al., 2025; Meena et al., 2020).

The survey was launched in 2021. The study invitation was sent out in multiple iterations, covering periods of the second and the third waves of the pandemic in India. This was done to widen representation across various demographics. The study employed a non-probability sampling design, specifically a combination of purposive and snowball sampling using a multi-pronged approach. For one, the researchers reached out to individuals with a known spiritual mindset within their personal networks. These individuals were further requested to disseminate the study invitation through their social media accounts. Additionally, the researchers established links with members of a few India-based social media channels—particularly on Facebook and YouTube—that regularly posted spirituality-related content during the pandemic. They were also requested to snowball the study invitation.

To be eligible for participation, individuals had to be Indians, at least 18 years old, and familiar with technology use with some experience of using it specifically for spirituality. Participants were informed that technology use for spirituality can encompass activities such as reading, writing and/or sharing posts, as well as watching, creating and/or sharing videos that foster feelings of peace, purpose, harmony, hopefulness, and compassion. The activities, which could be conducted on computers, smartphones, or tablets, may also facilitate a sense of connection with a higher power and cultivate a sacred feeling, potentially helping individuals transcend anxiety, independent of religious affiliation (Pruzan, 2011; Rodda et al., 2018; Thoresen & Harris, 2002). Data collection from eligible and interested individuals commenced only after receiving electronic informed consent.

To minimize the potential for common method bias, several procedural remedies were implemented during the design and administration of the survey, following the recommendations of Podsakoff et al. (2003). First, participants were provided with prior notice that all data would be collected anonymously, reducing the likelihood of social desirability bias. Second, the survey instructions explicitly stated that there were no right or wrong answers and emphasized that the results would be used strictly for academic research purposes. This was intended to reduce evaluation apprehension and encourage honest responding. Furthermore, the survey utilized previously validated scales, as explained in the 'Measures' sub-section. These procedural remedies were further supplemented by statistical assessments, including Harman's single-factor test and a variance inflation factor (VIF) assessment, as indicated in the 'Data Analysis' sub-section.

Measures

Technology Use for Spirituality

This scale draws on previous research that measured technology use for health-related, racism-related, and work-related information (Jiang, 2017; Pan et al., 2021; van Zoonen et al., 2017). For example, Pan et al. (2021) created a scale to measure the extent to which the participants used technology to read, post, and talk about racism-related information associated with COVID-19. Cronbach's alpha for the scale in Pan et al. (2021) was 0.85.

In this study, participants were required to indicate the extent to which they used technology to read up on, watch, and exchange spirituality-related information. The wording was rephrased to capture the past, the present, and the future technology use for spirituality separately. Specifically, to measure present technology use for spirituality, participants were asked to reflect on their pandemic experiences and respond to the following three items on a scale of 1 (strongly disagree) to 5 (strongly agree): "Of late, I have been using technology (e.g., Facebook, WhatsApp, YouTube, etc.) to read up on spirituality-related information," "Of late, I have been using technology (e.g., Facebook, WhatsApp, YouTube, etc.) to watch spirituality-

related videos," and "Of late, I have been using technology (e.g., Facebook, WhatsApp, YouTube, etc.) to exchange spirituality-related information."

To measure past technology use for spirituality, participants were asked to reflect on their experiences from the year before COVID-19 and respond to the following three items on a scale of 1 (strongly disagree) to 5 (strongly agree): "I used technology (e.g., Facebook, WhatsApp, YouTube, etc.) to read up on spirituality-related information," "I used technology (e.g., Facebook, WhatsApp, YouTube, etc.) to watch spirituality-related videos," and "I used technology (e.g., Facebook, WhatsApp, YouTube, etc.) to exchange spirituality-related information."

Finally, to measure future technology use intention for spirituality, participants were asked to reflect on their possible behaviors in the post-pandemic world and respond to the following three items on a scale of 1 (strongly disagree) to 5 (strongly agree): "In the post-pandemic world, I will use technology (e.g., Facebook, YouTube, etc.) to read up on spirituality-related information," "In the post-pandemic world, I will use technology (e.g., Facebook, YouTube, etc.) to watch spirituality-related videos," and "In the post-pandemic world, I will use technology (e.g., Facebook, WhatsApp, YouTube, etc.) to exchange spirituality-related information."

Technology Use for Crisis Information

Like technology use for spirituality, the scale to measure technology use for crisis information was also informed by Jiang (2017), Pan et al. (2021), and van Zoonen et al. (2017). On a scale of 1 (strongly disagree) to 5 (strongly agree), participants responded to the following three items: "I use technology (e.g., Facebook, WhatsApp, YouTube, etc.) to read up on COVID-19 information," "I use technology (e.g., Facebook, WhatsApp, YouTube, etc.) to watch COVID-19-related videos," and "I use technology (e.g., Facebook, WhatsApp, YouTube, etc.) to exchange COVID-19 information."

Crisis-related Anxiety

On a scale of 1 (strongly disagree) to 5 (strongly agree), participants responded to the following three items: "I feel anxious about my future due to COVID-19," "I feel anxious about my health because of COVID-19," and "I feel anxious about being infected by COVID-19." These were adapted from Yıldırım et al. (2020), which reported a Cronbach's alpha of 0.84.

Crisis-related Sense of Coping

On a scale of 1 (strongly disagree) to 5 (strongly agree), participants responded to the following three items: "I believe I have the ability to cope with COVID-19," "I think I can get through the COVID-19 pandemic," and "I can focus on the meaning of my life even during COVID-19." These were also adapted from Yıldırım et al. (2020), which reported a Cronbach's alpha of 0.71.

Problematic Technology Use

Participants responded to the shortened six-item Compulsive Internet Use Scale (Meerkerk et al., 2009; Nijssen et al., 2018). Specifically, in Nijssen et al. (2018), the scale had a Cronbach's alpha of 0.84 when measuring problematic social media use.

The six items used in this study, on a scale of 1 (never) to 5 (very often), are as follows: "How often have you been short of sleep due to technology use (e.g., Facebook, WhatsApp, YouTube, etc.)?," "How often have you preferred to use technology instead of spending time with others (e.g., partner, children, parents, friends)?," "How often have you thought you should reduce your use of technology?," "How often have others (e.g., partner, children, parents, friends) said you should reduce your use of technology?", "How often have you felt restless, frustrated, or irritated when you could not use technology?" and "How often have you relied on technology when you have felt down?"

The wording was rephrased to capture the past, the present, and the future problematic technology use separately. Specifically, to measure present problematic technology use, participants were asked to reflect on their experiences during the pandemic. To measure past problematic technology use, participants were asked to reflect on their experiences from the year before COVID-19. To measure anticipated problematic technology use in the future, participants were asked to reflect on their possible behaviors in the post-pandemic world.

Future Life Optimism

Post-crisis resilience was operationalized as future life optimism. On a scale of 1 (strongly disagree) to 5 (strongly agree), participants responded to the following three items: “In the post-pandemic world, I will expect the best,” “In the post-pandemic world, I will look on the bright side of things,” and “In the post-pandemic world, I will be optimistic about my future.” These were informed by studies such as Barton and Miller (2015) and Scheier and Carver (1985). Specifically, in the study where the scale was originally developed, a Cronbach’s alpha of 0.76 was reported (Scheier & Carver, 1985).

Control Variables

Data were collected on four control variables: gender, age, highest educational qualification, and average time spent on technology use per day. These were measured to account for potential demographic and usage-based variations.

Data Analysis

The data were analyzed using partial least squares structural equation modeling (PLS-SEM). It was deemed appropriate for two main reasons. First, spirituality-related technology use is an emerging phenomenon, and PLS-SEM is particularly well-suited for building theoretical models and exploring relationships in nascent research areas (Hair et al., 2022; Perdana et al., 2025). Second, the proposed model involves a complex set of structural relationships aimed at predicting endogenous constructs like future life optimism and anticipated problematic technology use. PLS-SEM is recognized for its ability to handle complex models without the strict distributional assumptions of covariance-based approaches (Hair et al., 2022; Urbach & Ahlemann, 2010).

PLS-SEM involves evaluation of the measurement model followed by that of the structural model (Hair et al., 2022). As part of the measurement model evaluation, internal consistency reliability was assessed in terms of composite reliability and Cronbach’s alpha. Convergent validity was assessed based on average variance extracted. Discriminant validity was assessed by examining the inter-construct correlations against the square roots of average variance extracted. Finally, responses to all items were subjected to Harman’s single factor test for the evaluation of common method bias (Podsakoff et al., 2003). This was supplemented by an inspection of the inner VIF values (Kock, 2015).

Thereafter, as part of the structural model evaluation, path coefficients were examined to test the posited hypotheses. Bootstrapping with 5,000 iterations was used to determine if the path coefficients were statistically significant. The values of R^2 and Q^2 were also checked for the endogenous constructs in the model.

Results

Sample and Measurement Model

The study sample included 443 participants, slightly dominated by males (58.2%). The average age was 34.70 years. A Master’s degree was the most frequent highest educational qualification (41.3%). Most of the participants reportedly spent more than three hours per day on average using technology (45.4%). The details of the sample are summarized in Table 1.

Table 1 - Sample Details		
	N = 443	**Percentage / Min / Max**
Gender		
Male	258	58.2%
Female	185	41.8%
Age (years)	M = 34.70 SD = 8.87	Min = 18 Max = 60
Highest educational qualification		
Secondary school	62	14.0%
Diploma/Advanced Diploma	5	1.1%
Bachelor's	128	28.9%
Master's	183	41.3%
Doctorate	36	8.1%
Others	29	6.5%
Average time spent on technology use per day		
Less than 1 hour	84	18.9%
1-3 hours	158	35.7%
More than 3 hours	201	45.4%

Table 2 and Table 3 summarize the results of the measurement model evaluation. Composite reliability consistently exceeded 0.65 while Cronbach's alpha was always above 0.70, confirming the internal consistency reliability of the constructs. Average variance extracted was above 0.40, ensuring convergent validity. The square roots of average variance extracted for all constructs exceeded the inter-construct correlations, suggesting sufficient discriminant validity. Common method bias was first inspected through Harman's single factor test. An exploratory factor analysis was conducted with all items used in the study. The principal component with unrotated factor solution revealed the extraction of more than one factor. The largest factor explained 22.56% of the total variance. When all questionnaire items load on a single factor that explains more than 50% of the variance, common method bias is said to be a concern. However, in this case, as there were several factors and one general factor did not explain the bulk of the variance, common method bias was not a concern (Podsakoff et al., 2003). Also, all inner VIF values were below the 3.3 threshold, further confirming no common method bias (Kock, 2015).

Table 2 - Internal consistency reliability and convergent validity.			
Constructs	**CR**	**Cronbach's α**	**AVE**
Past technology use for spirituality	0.94	0.90	0.83
Present technology use for spirituality	0.96	0.94	0.89
Technology use intention for spirituality	0.98	0.97	0.95
Present technology use for crisis information	0.95	0.92	0.87
Present crisis-related anxiety	0.97	0.95	0.91
Present crisis-related sense of coping	0.89	0.81	0.72
Past problematic technology use	0.93	0.91	0.68
Present problematic technology use	0.92	0.89	0.65
Anticipated problematic technology use	0.90	0.87	0.61
Future life optimism	0.92	0.88	0.80

Notes: CR = Composite Reliability, AVE = Average Variance Extracted.

Table 3 - Discriminant validity.										
Constructs	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
(1) Past technology use for spirituality	**0.91**									
(2) Present technology use for spirituality	0.40	**0.94**								
(3) Technology use intention for spirituality	0.23	0.81	**0.97**							
(4) Present technology use for crisis information	-0.07	0.15	0.14	**0.93**						
(5) Present crisis-related anxiety	0.11	-0.33	-0.39	0.41	**0.95**					
(6) Present crisis-related sense of coping	-0.05	0.22	0.25	-0.25	-0.35	**0.85**				
(7) Past problematic technology use	-0.33	0.24	0.22	0.23	-0.17	-0.09	**0.83**			
(8) Present problematic technology use	0.07	-0.11	-0.22	0.06	0.18	-0.17	0.36	**0.81**		
(9) Anticipated problematic technology use	0.18	-0.27	-0.39	0.10	0.41	-0.28	0.03	0.58	**0.78**	
(10) Future life optimism	0.05	0.34	0.22	-0.09	-0.14	0.62	-0.03	-0.22	-0.25	**0.90**

Notes: The diagonals in bold present the square root of AVE. Off-diagonals present the correlations.

Structural Model

The results of the structural model evaluation are as follows: During the pandemic, using technology to obtain COVID-19-related information was positively related to anxiety ($\beta = 0.41$, $t = 10.25$, $p < 0.001$). Hence, H1 was supported. The crisis-related anxiety was a negative predictor of technology use for spirituality ($\beta = -0.38$, $t = 9.74$, $p < 0.001$). However, a positive relationship was expected. Thus, H2 was not supported.

Nonetheless, technology use for spirituality was positively related to the sense of coping associated with the crisis ($\beta = 0.22$, $t = 4.07$, $p < 0.001$), lending support to H3. The sense of coping was negatively related to problematic technology use ($\beta = -0.14$, $t = 2.79$, $p < 0.01$), thereby supporting H4. It was also (a) positively related to future technology use intention for spirituality ($\beta = 0.07$, $t = 2.87$, $p < 0.01$), (b) positively related to future life optimism ($\beta = 0.62$, $t = 15.20$, $p < 0.001$), and (c) negatively related to anticipated problematic technology use in the future ($\beta = -0.19$, $t = 3.42$, $p < 0.001$). Hence, H5(a), H5(b), and H5(c) were all supported.

Figure 2 summarizes these results. Table 4 presents the values of R^2 and Q^2 for the endogenous constructs in the model. All Q^2 values were positive, confirming sufficient predictive relevance of the proposed theoretical model (Hair et al., 2022).

To ensure the robustness of the findings, a sensitivity analysis was conducted by controlling for gender, age, highest educational qualification, and daily time spent on technology use. These four control variables were linked to the three ultimate endogenous constructs (technology use intention for spirituality, future life optimism, and anticipated problematic technology use). The results indicated that the inclusion of these control variables did not alter the statistical significance or direction of any hypothesized relationships. They are thus omitted for parsimony.

Table 4 - Values of R^2 and Q^2.		
Constructs	**R^2**	**Q^2**
Present technology use for spirituality	30.60%	0.27
Technology use intention for spirituality	66.30%	0.62
Present crisis-related anxiety	16.60%	0.15
Present crisis-related sense of coping	4.80%	0.03
Present problematic technology use	15.00%	0.09
Anticipated problematic technology use	36.60%	0.22
Future life optimism	38.20%	0.30

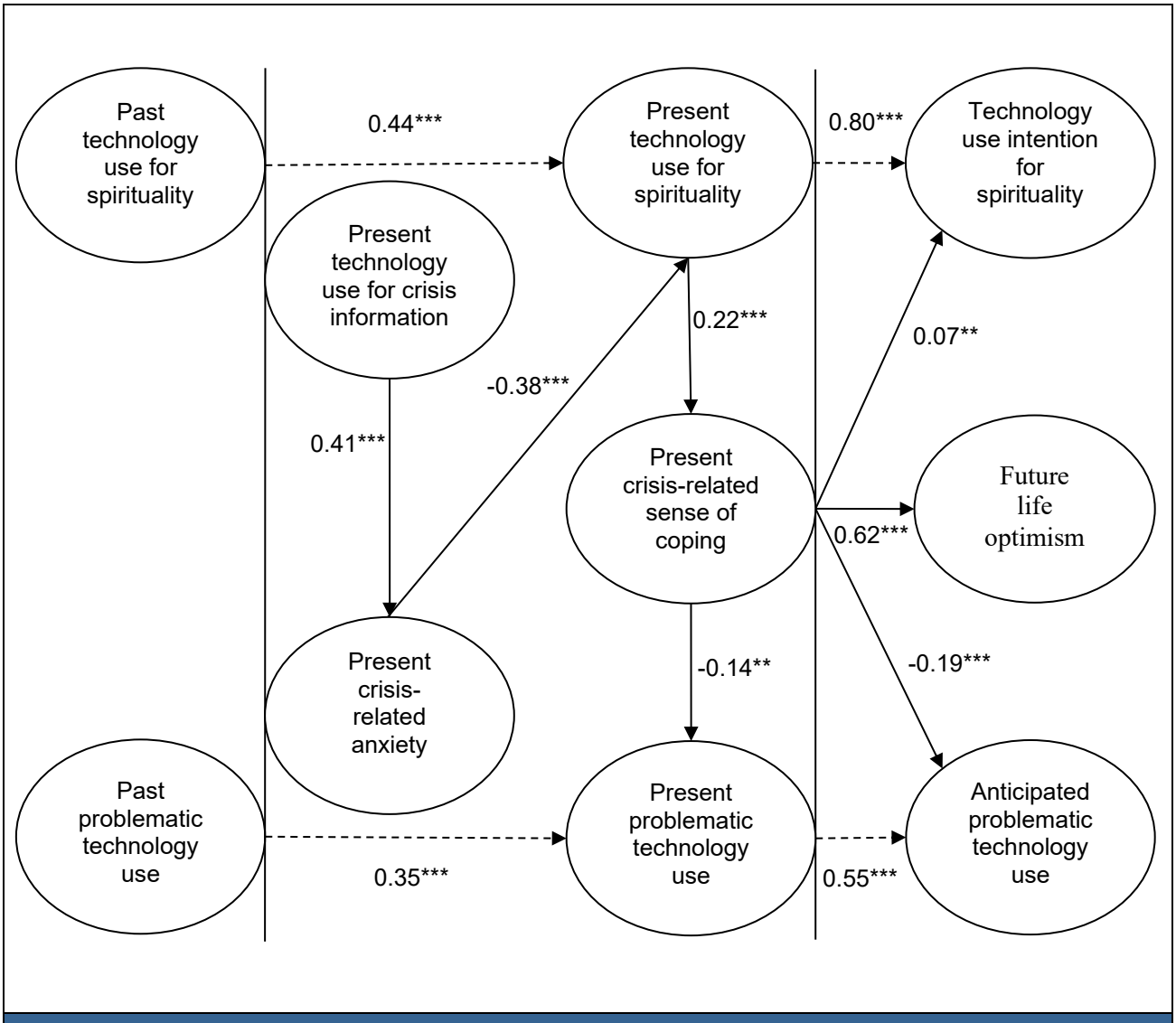

Figure 2 - Results of validating the proposed theoretical model (p < 0.01, *** p < 0.001).**

Discussion

The results corresponding to the hypotheses in the proposed theoretical model are discussed below. With respect to H1, the use of technology to obtain COVID-19-related information was a positive predictor of anxiety related to the pandemic. This finding echoes the literature on cyberchondria and online health information-seeking (Pal & Banerjee, 2021; Starcevic, 2017; Yang et al., 2025). The uncertainty of the pandemic would have enticed the participants to look for online information. These information seeking efforts ended up exacerbating their anxiety levels.

With respect to H2, crisis-related anxiety was a negative predictor of technology use for spirituality. The negative relationship is contrary to the discrepancy-enhancing mechanism of the cybernetic theory of stress (Carver, 2006; Carver & Scheier, 1982; Cummings & Cooper, 1979; Edwards, 1992), which suggests that individuals should distance themselves from the distress created by the pandemic with a greater proclivity to leverage technology for spirituality as a coping mechanism. Instead, the more anxious the participants were regarding the crisis, the less they utilized technology for spiritual purposes. The literature has revealed that factors such as effort expectancy and social influence, which usually promote individuals' technology adoption, do not have a significant relationship with technology use for spirituality in times of distress (Katoch & Rana, 2023). Building on the previous finding, this study shows that incorporating technology use for spirituality into one's coping process is not readily accessed during crises because of anxiety.

Integrating this finding with the transactional model of stress and coping (Lazarus & Folkman, 1984; Wolfers & Schneider, 2021), it seems that the stressors during the pandemic were so overwhelming that the participants failed to utilize spirituality-related technology use as a coping strategy. Here, the distinction between the type of technology use (information search vs. spirituality) and the extent of that use is critical. It is likely that the extent of information-seeking was so overwhelming that any further digital engagement—even for positive, spiritual purposes—became undesirable. This necessitates a theoretical pivot from viewing technology use for spirituality simply as an accessible coping tool to understanding the inhibitory role of anxiety itself. The finding suggests a boundary condition for the cybernetic theory of stress. High levels of anxiety may overwhelm the cognitive resources needed to initiate a goal-directed coping strategy. Highly anxious individuals might have been unable to concentrate on accessing, navigating, and engaging with spiritual content on technological platforms, even if the content itself could offer solace. Instead of using technology to bridge the gap with their spiritual community, overwhelming anxiety might have led to a desire for disengagement.

With respect to H3, technology use for spirituality was a positive predictor of the sense of coping. This is consistent with the discrepancy-reducing mechanism of the cybernetic theory of stress (Carver, 2006; Carver & Scheier, 1982; Cummings & Cooper, 1979; Edwards, 1992), which suggests that individuals adjust their behaviors to bring themselves closer to a new desired state. The finding is also consistent with the wider literature that has documented the positive effect of spirituality on coping (Comstock & Partridge, 1972; Harris et al., 1995; Yonker et al., 2012). Once the barrier of anxiety was crossed and the participants successfully engaged with spiritual content, the technology finally functioned as a critical coping resource. This indicates that the quality of engagement matters more than the quantity of screentime; spiritual engagement transforms technology from a source of distress into a self-selected, positive psychology intervention.

With respect to H4, the sense of coping was a negative predictor of problematic technology use. In other words, participants who felt a high sense of coping amid the pandemic were less likely to engage in problematic technology use. Even though the pandemic-induced lockdowns created optimal conditions for problematic technology use (Erhel et al., 2024), the sense of coping appears to have served as a useful antidote.

Finally, with respect to H5, the sense of coping was a (a) positive predictor of future technology use intention for spirituality, (b) positive predictor of future life optimism, and (c) negative predictor of anticipated problematic technology use in the future. This highlights that the discrepancy-reducing mechanism of the cybernetic theory of stress could be stable over time. Prior works have shown that positive psychology interventions are effective in promoting post-traumatic growth, mental well-being, and psychological resilience (Hendriks et al., 2021; van Tongeren et al., 2020). Extending the literature, this study shows that the use of technology for spirituality—a self-selected, technology-mediated positive psychology intervention—can help not only improve post-traumatic resilience but also address the peril of problematic technology use, thereby contributing to the broader goal of fostering societal resilience and well-being through digital means.

Implications

Theoretical Contributions

This study contributes to theory in three ways. First, it advances the scholarly understanding of how the use of technology amid a crisis could translate into post-crisis resilience and well-being. Building on the literature that has identified spirituality as an important coping mechanism (Koenig, 2020; Meena et al., 2020; Wiederhold, 2020), this study reveals that spirituality-related technology use during crises can help enhance

the sense of coping. Prior works have shown that anxiety during a crisis negatively predicts the sense of coping (Yıldırım et al., 2020). To augment the literature, this study finds that the sense of coping during a crisis can be enhanced if technology is used for spirituality. Moreover, while previous research has hinted at the possibility of an inverse relationship between the use of technology for spirituality and problematic technology use (Shi et al., 2019; Shim, 2019; Wood et al., 2016), this study suggests that the relationship could be explained through the sense of coping. Furthermore, this is the first study to uncover that the sense of coping that one develops by making spirituality-related technology use during crises can be a positive predictor of future life optimism.

Second, the study adds to the understanding of the cybernetic theory of stress that encompasses a discrepancy-enhancing mechanism and a discrepancy-reducing mechanism (Carver & Scheier, 1982; Cummings & Cooper, 1979; Edwards, 1992). In the current context, support was found for the discrepancy-reducing mechanism but not for the discrepancy-enhancing mechanism. Counter-intuitively, individuals did not distance themselves from the pandemic by actively using technology for spirituality. If anything, their high levels of anxiety seemed to deter their use of technology for spirituality. This counter-intuitive finding enriches the understanding of boundary conditions for the cybernetic theory, suggesting that the drive to initiate discrepancy-enhancing strategies is suppressed when anxiety exceeds a certain threshold. This reflects a paradox where technology use, having already exacerbated anxiety, becomes an unattractive venue for seeking solace, even when spiritual resources are available. The high cognitive load that the participants experienced in the overwhelming situation might have prevented them from exploring different discrepancy-enhancing strategies. Future applications of the cybernetic theory of stress need to tease out why strategies to distance oneself from the stressor could be overlooked during distress. A possible option is to incorporate cognitive load into the equation.

Third, while the field of positive psychology has now existed for a while (Seligman, 2011; Seligman & Csikszentmihalyi, 2000), this study raises the visibility of the nascent field of positive technology within the literature on human-technology interaction and information systems. The positive psychology literature has already documented how positive psychology interventions can promote post-traumatic growth, mental well-being, and psychological resilience (Hendriks et al., 2021; van Tongeren et al., 2020). Guided by the notion of the digital divine (Katoch & Rana, 2023; Meena et al., 2020; Wolf et al., 2024), this study considers techno-spiritual practices as a positive technology intervention—a positive psychology intervention delivered via technology—that can not only improve post-crisis resilience but also address the peril of problematic technology use. It also calls for further research on the efficacy of positive technology interventions in different settings such as military conflicts, wars, emergencies, and personal tragedies. Such efforts would help further integrate positive technology into the literature on crisis informatics.

Practical Implications

This study offers three critical insights for the Asia-Pacific region, particularly India, where the digital divine is a growing societal force. First, technology platforms should implement digital nudges to raise awareness of techno-spiritual resources as vehicles of coping during extreme events. The finding that COVID-19 anxiety was not a positive predictor of the use of technology for spirituality suggests that, amidst the overwhelming situation, the potential for positive digital coping was likely overlooked. Platforms operating in the region must prioritize low-barrier, simplified access to spiritual content during crises to lower the barrier created by high anxiety. Public health organizations are also recommended to develop digital resources to promote this form of coping.

Second, as Indian spiritual organizations continue to raise their digital presence, it is important for spiritual leaders to highlight to laypeople how to make optimal use of technology. While platforms such as Facebook and WhatsApp could be great conduits for individuals to access spirituality and make sense out of crises, they can also be minefields of personalized distractions that can swiftly deplete the acquired wisdom. In this vein, spiritual leaders like Gaur Gopal Das or Sadhguru are uniquely positioned as trusted intermediaries to promote digital literacy, ensuring that spiritual engagement does not devolve into problematic use. Furthermore, during public health emergencies, organizations such as the Ministry of Health and Family Welfare (India) could collaborate with verified spiritual influencers to disseminate calming, resilience-building content alongside medical facts. This dual-track approach would address the paradox identified in this study: it would leverage the reach of digital platforms to provide solace while mitigating the anxiety triggered by the frantic information-seeking common in times of distress.

Third, the findings suggest a need for educational and policy-level integration. Educators in India should highlight the potential of positive technology interventions in digital literacy curricula. The role of digital mindfulness could be highlighted so that one is able to make the best possible use of technology while avoiding its inherent pitfalls. At the macro level, Indian policymakers should view techno-spiritual platforms

as vital components of a digital public infrastructure for mental health. Given the region's deep-rooted cultural reliance on spiritual coping, such an indigenous approach to digital well-being is essential for building resilient communities in such a fast-growing digital economy. Such initiatives directly align with the United Nations Sustainable Development Goals (SDGs) regarding health and well-being (Goal 3) by leveraging technology to foster societal resilience.

Limitations and Future Research

The findings should be viewed considering the following limitations. First, the cross-sectional nature of the study meant that there was no scope to track participants' future behaviors. Their retrospective reports of past technology use for spirituality and past problematic technology use—though not the main focus in this study—may have been subject to recall bias. A longitudinal research design spanning pre-, during, and post-crisis phases would have yielded more robust findings. Future research in this area should prioritize the development of designs capable of capturing data across pre-, during, and post-crisis periods.

Second, all the participants were from India, and the COVID-19 pandemic was chosen as the context for investigation. Caution is advocated in generalizing the findings. For one, individuals from different countries might differ in their attitudes towards the use of spirituality as a coping mechanism. Moreover, their ability and willingness to use technology for spirituality would be dictated by internet penetration in their places of residence. The sample recruited in this study might inherently represent privileged demographics with ample digital access and is not representative of the entire population of technology users. Furthermore, whether these findings would be replicated in other large-scale world crises, such as military conflicts, or local crises, like natural disasters, remains to be seen. Scholars exploring this topic are invited to carry out similar research in other countries and contexts.

Third, this study's broad conceptualization of technology as an encompassing category of social media, messaging, and videoconferencing tools did not allow capturing the nuances of user behavior across different platforms. Future research should adopt a more fine-grained approach. For example, researchers could investigate how users' reliance on specific platforms—such as Instagram for visual spiritual content, Zoom for live group meditations, or Facebook for community discussions—impacts their ability to cope with a crisis. This would involve a comparative study across different platforms to understand which digital environments are most effective for different types of spiritual practices during times of distress.

Conclusion

This study has proposed and validated a theoretical model that links information search about a crisis, anxiety during the crisis, spirituality-related technology use, the sense of coping, problematic technology use, and future life optimism. The key findings are as follows: Using technology to obtain crisis-related information was a positive predictor of anxiety, which in turn was negatively related to technology use for spirituality. Nonetheless, technology use for spirituality was a positive predictor of the sense of coping, which turned out to be a negative predictor of problematic technology use. This sense of coping was also positively related to post-crisis life optimism.

To conclude, while spirituality has often been seen as the taboo topic of scientific inquiry (Giannelia & Golub, 2025), this study represents a modest attempt to integrate it into the academic discourse on human-technology interaction and information systems. It shows that the dark cloud of crises does have a silver lining: Spirituality-related technology use during crises can improve future resilience and, in turn, help build resilient communities. Therefore, the study hopes to inspire people to use crises as an opportunity to deepen faith in spirituality, which could be done with the help of technology.

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