A STUDY OF MINDFULNESS AND ORGANISATIONAL RELIABILITY IN INDIA

THESIS

Submitted in fulfillment of the requirements for the award of the degree of

DOCTOR OF PHILOSOPHY

By

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CANDIDATE'S DECLARATION

I, Jitesh Bhardwaj, hereby certify that the work which is being presented in the thesis entitled **"A Study of Mindfulness and Organisational Reliability in India"**, in fulfillment of the requirements for the award of the degree of **Doctor of Philosophy**, submitted in the Department of Delhi School of Management, Delhi Technological University is an authentic record of my own work carried out during the period from August 2017 to May 2025 under the supervision of Prof Anu Singh Lather and Dr. Vikas Gupta.

The matter presented in this thesis has not been submitted by me for award of any other degree of this or any other institute.

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CERTIFICATE BY THE SUPERVISORS

Certified that **Jitesh Bhardwaj (2K17/PhD/DSM/05)** has carried out his research work presented in this thesis entitled **"A Study of Mindfulness and Organisational Reliability in India",** for the award **of Doctor of Philosophy** from Department of Delhi School of Management, Delhi Technological University, Delhi under our supervision. The thesis embodies the results of original work, the study is carried out by the student himself and the content of the thesis does not form the basis for the award of any other degree to the candidate or anybody else from this or any other university or Institute.

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ABSTRACT

"A Study of Mindfulness and Organisational Reliability in India", explores the complex correlation between Mindfulness and Reliability in the specific setting of selected Indian defence organisations engaged in aircraft maintenance and related activities. The study aims to establish the achievement of organisational reliability through Mindfulness practices.

The selected organisations have been assessed for eight distinct characteristics that are used to define high-reliability organisations (HROs) though surveys and interviews conducted on employees of these organisations. These organisations have also been evaluated for the presence of Collective Mindfulness indicators through five specific components using surveys.

Past studies have established the relationship between Mindfulness and organisational performance, leading to better employee performance and organisational effectiveness, through enhanced stress resilience and problem-solving abilities in employees. This study proposes a framework to identify the characteristics of HROs in selected Indian organisations along with the tendencies of these organisations towards achieving Collective Mindfulness.

Mindfulness-based approaches assert that the ability of individuals and organisations to achieve consistent performance in dynamic settings is dependent on their cognitive processes, such as information acquisition, comprehension of their surroundings, and adaptability.

The purpose of this study is to identify opportunities to develop HRO characteristics within these Indian organisations to reduce error rates and strengthen safe operations. Previous researches have shown that organisational principles of HROs can encourage Mindfulness and improve quality, reliability, and productivity. This study using Partial Least Squares Structural Equation Modeling (PLS-SEM) indicates that Mindfulness features have a significant influence on organisational reliability. This analysis provides empirical evidence for the relationship between Mindfulness aspects and organisational reliability.

Also, Importance-Performance Map Analysis (IPMA) provides a deeper understanding of the crucial elements that affect the reliability of an organisation, revealing areas that are highly suitable for improvement.

The research reveals significant parallels across Indian firms regarding safety considerations, dedication to adaptability, and attentiveness to operations, highlighting the widespread presence of certain organisational characteristics. This thorough assessment not only enhances the academic discussion but also provides practical suggestions for improving the organisation.

The study investigates how Mindfulness practices influence organisational reliability in Indian contexts. It begins by establishing theoretical foundations of Mindfulness and reliability, exploring their distinct characteristics and benefits in organisational settings. Methodologically, it employs questionnaires, interviews, and interactions to gather data on Mindfulness levels and organisational reliability. Statistical techniques like PLS-SEM and IPMA are used to analyse correlations and patterns in the data, aiming to provide empirical evidence of their relationship. Practical implications include integrating Mindfulness into leadership and policy to enhance organisational performance and employee well-being. The study also suggests future research directions such as longitudinal studies and cross-cultural comparisons to further explore these dynamics.

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ACT	-	Acceptance and Commitment Therapy
ANOVA	-	Analysis of Variance
AVE	-	Average Variance Extracted
BCP	-	Business Continuity Planning
BDI	-	Beck Depression Inventory
CAMM	-	Child and Adolescent Mindfulness Measure
CFA	-	Confirmatory Factor Analysis
DBT	-	Dialectical Behavioural Therapy
DGQA	-	Directorate General of Quality Assurance
DM	-	Dispositional Mindfulness
EEG	-	Electroencephalogram
EFA	-	Exploratory Factor Analysis
FFMQ	-	Five Facet Mindfulness Questionnaire
FMI	-	Freiburg Mindfulness Inventory
HAL	-	Hindustan Aeronautics Ltd
HRA	-	Human Reliability Analysis
HRHCM	-	High-Reliability Health Care Maturity
HRO	-	High Reliability Organisation
HTMT	-	Heterotrait-Monotrait Ratio of Correlations
IA	-	Indian Army
IAF	-	Indian Air Force
IPMA	-	Importance-Performance Map Analysis
KMO	-	Kaiser-Meyer-Olkin
LM	-	Linear Model
MAAS	-	Mindful Attention Awareness Scale
MARS	-	Mobile Application Rating Scale

MBCT	-	Mindfulness-Based Cognitive Therapy
MBI	-	Mindfulness Based Interventions
MBSR	-	Mindfulness-Based Stress Reduction
MBSR	-	Mindfulness-Based Stress Reduction
MDD	-	Major Depressive Disorder
MMP	-	Mindfulness Meditation Program
NPCIL	-	Nuclear Power Corporation of India
OM	-	Organisational Mindfulness
ORMM	-	Organisational Reliability Maturity Model
PCA	-	Principal Component Analysis
PHLMS	-	Philadelphia Mindfulness Scale
PLS-SEM	-	Partial Least Squares Structural Equation Modeling
RE	-	Resilience Engineering
REHRS	-	Reliability-Enhancing Human Resource Strategy
RMSE	-	Root Mean Square Errors
ROEBs	-	Reliability-Oriented Employee Behaviors
SCR	-	Supply Chain Resilience
SEM	-	Structural Equation Modeling
SOS	-	Safety Organizing Scale
SRMR	-	Standardised Root Mean Residual
TAU	-	Treatment as Usual
VIF	-	Variance Inflation Factor
$\chi 2$ Test	-	Chi-Square Test

Chapter 1
Introduction

1.1 Overview

Mindfulness has gained widespread awareness and popularity through many mediums such as mobile apps, educational courses, media coverage, and literature targeting both children and adults (Davis & Hayes, 2012). Commonly, the term 'Mindfulness' is used to describe approaches centered around meditation (Kabat-Zinn, 2003). However, in scientific literature, Mindfulness encompasses a broader range of concepts beyond merely contemplative activities (Brown & Ryan, 2003). Mindfulness is gaining increasing attention in firms that are concerned about the impact of constant and unanticipated shifts on the well-being of their personnel.

Mindfulness-Based Interventions (MBIs) are increasingly being utilised in several business areas (Lomas et al., 2015). It facilitates the improvement of employees' resilience and well-being, promotes more innovative problem-solving, and boosts individual performance through the adoption of 'mindful behaviors' (Carter et al., 2016). Mindfulness is the deliberate practice of observing things that truly are in the current moment, free from any distractions, prejudices, or preconceived notions (Shapiro & Carlson, 2009). According to Neff (2003), Mindfulness involves approaching the present experience with an unbiased and objective mindset, while also embracing qualities like kindness, compassion, and curiosity.

Mindfulness enables individuals to get a profound comprehension and examination of their own internal and external experiences by becoming aware of their ideas, emotions, sensations, actions, and consequences (Kabat-Zinn, 1990). By engaging in targeted Mindfulness techniques, individuals can enhance their awareness of their perceptions and consciously decide which thoughts and emotions to act upon and which ones to release, instead of instinctively reacting without thought (Patel, 2017).

People who are actively and attentively involved in any task are both inspired and capable of examining a broader range of perspectives and making more accurate and specific

observations about events in their surroundings (Langer, 1989). This allows them to adjust and respond to changes in their environment (Roeser & Eccles, 2015). A culture of Mindfulness aims to identify and generate alternative solutions rather than simply choosing the best option from the ones already available (Weick & Sutcliffe, 2007). Mindfulness-based approaches assert that the capacity of individuals and organisations to attain consistent performance in dynamic settings is contingent upon their cognitive processes and their ability to acquire information, comprehend their surroundings, and their ability to adapt their points of view to align with the current circumstances (Brown & Ryan, 2004). Mindfulness involves attentiveness to detail and the ability to discern between what is typical and what is atypical (Grossman et al., 2004). This heightened awareness enables the identification and rectification of errors that have the potential to grow into a crisis (Bhardwaj et al., 2020).

Comprehensive and the generalization of Mindfulness's benefits point to a fundamental relationship between Mindfulness and company performance (Goyal et al., 2014). It is widely agreed that Mindfulness has beneficial impacts on various aspects of employee performance and organisational effectiveness, such as stress resilience and problem-solving abilities (Kozomara, 2022). In recent years, the significance of an organisation's capacity to sustain optimal performance despite the disturbances it encounters has increased (McCauley & White, 2019). Furthermore, when evaluating the organisation's performance in challenging circumstances, it is important to emphasize the impact of organisational mistakes, which are typically caused by these conditions and affect the organisation's capacity to sustain optimal performance (Tworek et al., 2020).

1.2 Background

Buddhism and other Eastern philosophical traditions define Mindfulness as a mental attitude that allows one to pay equal attention to one's internal experiences and external behaviours (Kabat-Zinn, 2003). Openness and impartial evaluation of the surroundings, along with awareness of one's inner feelings, are arguably the fundamental components of moral reasoning (Keltner & Haidt, 2003). Mindfulness possesses a characteristic similar to constancy, yet also exhibits a quality of adaptability that can be developed through practice (Kabat-Zinn, 1990). Mindfulness, originating from Buddhist meditation techniques, has

attracted considerable interest in recent times due to its potential advantages for mental well-being, overall health, and performance in other areas, such as the professional environment (Pandey et al., 2018). Mindfulness is the intentional act of directing one's attention to the current moment, adopting an attitude of receptiveness, inquisitiveness, and impartiality (Pandey et al., 2018).

Dr. Jon Kabat-Zinn, the creator of the MBSR (Mindfulness-Based Stress Reduction) scheme at the University of Massachusetts Medical Centre, defines Mindfulness as the non-judgmental awareness that arises from directing one's attention to the present moment (Kabat-Zinn, 2003). Mindfulness training encourages participants to "drop into" the "actuality of the lived experience" rather than concentrate on the here and now or on possible outcomes. A Mindfulness method employed in MBSR includes the body scan, where participants focus their attention and awareness on different regions of their bodies (Kabat-Zinn, 1990). Additional methods encompass diaphragmatic breathing, seated meditation and Hatha yoga among various others (Hölzel et al., 2011).

Mindfulness is a sort of practice that involves being fully present in the current moment, rather than preparing for a future event (Brown & Ryan, 2003). Mindfulness practices have a crucial part in contemporary psychotherapy procedures (Hayes et al., 2011). Some examples of Mindfulness-based therapies are Mindfulness-Based Stress Reduction (MBSR), Dialectical Behavioural Therapy (DBT), Mindfulness-Based Cognitive Behavioural Therapy (MBCT), and Acceptance and Commitment Therapy (ACT), among others (Linehan, 1993). In the last three decades, Mindfulness-based therapies have experienced significant growth in popularity, with more than 17,000 individuals completing programs at over 200 MBSR institutions in the United States alone (Hofmann & Gomez, 2017). The impact of Mindfulness on the field of psychotherapy is seen via the increasing number of counsellors and therapists who integrate Mindfulness into their practice as one of several therapeutic techniques (Gordon, 2009).

Reliability usually means how consistently and dependably systems, processes, or people do their jobs or provide results (Aken & Berends, 2018). Organisational performance and reliability are typically determined by variables such as consistently meeting deadlines, producing high-quality goods and services, and reducing mistakes or disruptions (Evans

& Lindsay, 2017). Organisational dependability refers to the ability to consistently generate collective results that satisfy a predetermined minimum standard. Performance reliability refers to achieving the required level of results and effectively managing variations in outcomes by eliminating undesirable variations in service qualities. This can result in loyalty and client satisfaction (Ndubisi, 2012). The rapid advancement of the industry, particularly in recent decades, has considerably complicated the operation of manufacturing processes and therefore heightened the maintenance process.

In modern times, it is necessary to ensure the dependability of hardware assets and the safety of employees, while also minimizing environmental risks, when conducting manufacturing processes with optimal efficiency, effectiveness, and adaptability. Simultaneously, there is a rising recognition of the importance of maintenance providers in preventing failures and detecting early problems with equipment and systems. This, in turn, extends the lifespan of production systems and has a positive impact on achieving high levels of productivity (Antosz et al., 2022).

1.3 Meaning of Mindfulness

The concept of Mindfulness can be defined and implemented in various manners, leading to the unfortunate outcome that there is often confusion regarding its precise meaning when someone discusses Mindfulness. This has led to requests for defining Mindfulness more precisely, as opposed to referring to it more broadly under the word Mindfulness (Reb & Atkins, 2015). Mindfulness originates from Eastern religions, particularly Buddhist traditions. Mindfulness is the state of consciously focusing one's attention on the present moment experiences, without passing judgment or resistance (Hülsheger et al., 2013).

Mindfulness, defined as non-judgmental awareness of the present moment, has garnered significant attention for its diverse benefits across psychological and physiological domains (Good et al., 2016; Oeij et al., 2018). Cavanagh et al. (2014) and Tomlinson et al. (2018) provide evidence linking mindfulness to physical health benefits, including lowered blood pressure and improved immune function, crucial for maintaining well-being. Furthermore, mindfulness is associated with enhanced life satisfaction and

improved interpersonal relationships, promoting empathy and effective communication (Carson et al., 2004; Tomlinson et al., 2018).

Research highlights its efficacy in stress reduction through practices like Mindfulness-Based Stress Reduction (MBSR), which emphasize present-moment awareness (Sutcliffe et al., 2016; Linnenluecke et al., 2017). Khoury et al. (2015) confirm its role in alleviating symptoms of depression and anxiety, contributing to enhanced psychological well-being. Tang et al. (2007) demonstrate how mindfulness meditation enhances cognitive functions such as attentional control and working memory, improving overall cognitive performance. Emotion regulation benefits are underscored by Rojiani et al. (2017), who show that mindfulness cultivates emotional resilience through enhanced control and acceptance of emotions.

In 1979, Kabat-Zinn introduced the psychological viewpoint on Mindfulness by incorporating Buddhist Mindfulness meditation into an initiative identified as Mindfulness-Based Stress Reduction (MBSR) (Kabat-Zinn, 1990). It states that awareness is the result of focusing one's attention on an item to control and maintain attention without making judgments about the experiences occurring during that focused attention. This program was designed to reduce discomfort in patients who have chronic pain and help them adapt to medical illness (Kabat-Zinn, 2003). Mindfulness is the state of being aware and attentive, with a specific intention, without passing judgment, and while fully focusing on the current moment (Laeequddin et al., 2023).

The use of Mindfulness practices and abilities by various team members has an impact on the procedures and results of both the team and the organisation (Rupprecht et al., 2019). These benefits may encompass, among other factors, less conflict, enhanced interpersonal connections, heightened recognition of faults or issues in work procedures, and elevated team and organisational efficiency (Goyal et al., 2014). This point of view should also consider how organisational characteristics may influence the impact of meditation techniques on team and company outcomes (Reitz & Barrett, 2021). The results for organisations or teams will be influenced by the collective practice of Mindfulness among multiple members. However, the impact of this practice will depend on several factors, including the presence of a clear and shared purpose, a strong

alignment of values between members as well as the organisation, and the presence of favorable, empathetic, and authentic leadership (Avolio et al., 2009).

1.4 Organisational Mindfulness

Organisational Mindfulness (OM) is a powerful capacity that has the potential to overcome obstacles (Shahbaz & Parker, 2022). Organisational Mindfulness goes beyond individual Mindfulness by including the principles of non-judgmental acceptance and present-moment awareness (Sutcliffe & Vogus, 2003). It refers to the shared awareness or understanding that exists among the members of an organisation (Weick & Sutcliffe, 2007). It involves developing a culture that promotes Mindfulness, consciousness, and intentional behavior in all aspects of corporate operations (Langer, 1997).

Organisational Mindfulness, Mindful Organizing, and Collective Mindfulness are all related ideas that come from safety and crisis management groups that try to stop disasters and failures (Weick & Sutcliffe, 2001). These concepts, however, have not been widely applied in the context of adopting new ideas (Oeij et al., 2022). Organisational Mindfulness encompasses the ability to recognize subtle indications of potential failure, make judgments, and act based on concrete information and facts (Weick, 1995). Additionally, it involves the capacity to adapt and bounce back from setbacks and unexpected shifts in direction (Baker et al., 2006). Organisational Mindfulness, also known as work or workplace Mindfulness, refers to the combined ability of personnel within an organisation to sustain a state of present-moment awareness, focused attention, and a non-judgmental attitude towards both internal and external experiences (Zheng et al., 2023). It entails being completely immersed and conscious of the present circumstances without becoming excessively responsive or critical (Langer, 1997). Developing organisational Mindfulness enables firms to proactively adjust to the unpredictable business environment (Weick & Sutcliffe, 2007). This practice provides executives and staff with a deep understanding of the current environment, allowing them to predict upcoming trends and effectively react to new possibilities and dangers (Motwani et al., 2023). Additionally, organisational Mindfulness offers a structure for employees to effectively manage the complexities of their work with clarity, focus, and adaptability, which mitigates the harmful effects of stress on their overall health and wellness (Kabat-Zinn, 2003). When employees have increased

job satisfaction and better mental health, their total productivity and engagement significantly increase, which benefits both the individuals and the organisation (Hülsheger et al., 2013).

1.4.1 Advantages of Organisational Mindfulness

Organisational Mindfulness has garnered significant interest recently due to its potential benefits for workplace efficiency, employee well-being, and corporate success (Shahbaz & Parker, 2022). Some of the advantages of organisational Mindfulness are:

- **Enhanced Decision Making**

Organisational Mindfulness enhances decision-making by increasing awareness of the present situation and enabling more informed and deliberate decision-making processes (Langer, 1989). Mindful individuals and teams exhibit greater clarity, introspection, and consideration of multiple viewpoints, which leads to more effective decision-making outcomes (Liu et al., 2018). By promoting non-reactivity and an in-depth understanding of circumstances, Mindfulness helps managers and teams make better-informed decisions (Weick & Sutcliffe, 2007).

- **Stress Reduction and Well-being**

Organisational Mindfulness activities are effective in reducing stress and enhancing overall well-being by fostering a non-judgmental focus on the present moment (Davidson, 2010). This approach leads to higher job satisfaction and fewer instances of work-related stress (Davidson, 2010). Through the development of a supportive culture, adaptation strategies, and Mindfulness practices, organisations can improve employees' mental health and job satisfaction (Frank et al., 2015). As a result, a more positive and productive work environment is created (Motwani et al., 2023).

- **Improved Communication and Collaboration**

Organisations that prioritize Mindfulness tend to create environments that foster transparent communication and effective collaboration (Hanh, 1975). Mindfulness encourages active listening, empathy, and effective communication, which helps build stronger relationships and enhances productivity (Huston et al., 2011). In such

environments, employees engage in respectful dialogue, appreciate diverse perspectives, and collaborate more effectively to achieve common objectives (Huston & Burgess, 2011).

➢ **Resilience and Adaptability**

Organisations that engage in Mindfulness are generally better equipped to handle change and uncertainty due to increased resilience and adaptability (Goleman, 1995). It was argued by Goleman (1995) that Mindfulness fosters resilience by helping individuals maintain a steady, balanced perspective amid external pressures and challenges and through the practice of Mindfulness, employees develop emotional regulation skills that enable them to face difficulties with calmness and resilience. Organisational Mindfulness supports resilience by promoting a culture of acceptance rather than reaction to failures, allowing organisations to learn from mistakes and adapt to new circumstances (Johnstone et al., 2021). Mindfulness encourages organisations to embrace failures as learning experiences, which enhances their ability to adapt and thrive in evolving environments (Kabat-Zinn, 2003). Conscious leaders and teams, through Mindfulness, demonstrate increased adaptability and grace when confronting obstacles, contributing to a thriving organisational environment (Johnstone et al., 2021).

According to the study, Mindful leadership and team dynamics enable organisations to navigate challenges with resilience and effectiveness. Mindfulness practices enable organisations to develop strategies for dealing with uncertainty and achieving sustainable growth in a constantly changing environment (Weick & Sutcliffe, 2006). Mindfulness helps organisations develop resilience through adaptive processes and proactive strategies. Engaging in Mindfulness fosters a resilient mindset among employees that helps them bounce back from adversity and adapt to unexpected changes (Sutcliffe & Vogus, 2003). Mindfulness encourages a culture of reflection and learning, which strengthens organisational resilience and adaptability over time and Mindfulness promotes resilience by encouraging reflective practices and continuous learning (Brown & Ryan, 2003).

➢ **Enhanced Creativity and Innovation**

Organisational Mindfulness enhances innovative thinking and creativity by encouraging openness, curiosity, and exploration of new ideas (Brown & Ryan, 2003). Leaders and teams aware of their surroundings approach challenges with fresh perspectives, embrace uncertainty, and leverage creativity to drive continuous improvement and growth (Glomb et al., 2011). Engaging in mindfulness practices correlates with increased creativity and innovation within organisational contexts (Dane, 2011). By fostering a mindset of curiosity and inquiry, employees are more likely to generate innovative ideas and devise novel solutions to problems (Hülsheger et al., 2013).

1.5 Organisational Reliability

Organisational reliability is a multifaceted concept encompassing the consistency, dependability, and trustworthiness of various organisational components (Bieńkowska et al., 2020). The meaning of reliability can be context-dependent and relational, involving multiple understandings such as achieving outcomes, complying with norms, and communicating expectations (Busby & White, 2014). Rather than attempting to achieve invariance through rigid rules, reliability can be enhanced by managing fluctuations in organisational relationships and practices (Schulman, 1993). A strategic human resource management approach to HROs identifies reliability-oriented employee behaviors (ROEBs) and proposes a reliability-enhancing human resource strategy (REHRS) to foster these behaviors (Ericksen & Dyer, 2005). This approach extends beyond general high-performance strategies to address specific organisational goals in reliability-seeking contexts.

Organisational reliability encompasses consistency, trustworthiness, and stability of processes and indicators over time (Schulman, 1993; Busby & White, 2014). Reliability is achieved through managing fluctuations in organisational relationships and practices, rather than rigid rules (Schulman, 1993). It involves multiple understandings, including outcome achievement, norm compliance, and effective communication (Busby & White, 2014). Mindfulness, focusing on present-moment phenomena, contributes to reliability by promoting adaptability and attention to detail (Lather et al., 2020). A reliability-enhancing human resource strategy (REHRS) can foster reliability-oriented employee

behaviors (ROEBs), which are particularly valuable in organisations operating under trying conditions (Ericksen & Dyer, 2005). Reliability in the workplace refers to the consistent, dependable, and trustworthy nature of many parts of the business, such as personnel performance, systems and procedures, trust, leadership and information or data management (Tworek et al., 2020).

1.5.1 Factors of Organisational Reliability

- **Employee Performance**

Employee performance relies heavily on reliability, which ensures consistent and trustworthy completion of duties and meeting deadlines (Smith & Johnson, 2010). Dedicated personnel play a crucial role in the success of an organisation by upholding rigorous standards, promoting collaboration, and improving overall efficiency and effectiveness (Jones, 2015). Reliability is linked to the degree of consistency exhibited by personnel in carrying out their jobs and responsibilities (Brown & Davis, 2012). Dependable employees are individuals who consistently adhere to deadlines, produce work of high quality, and fulfill their duties without frequent mistakes or variations in performance (Robinson et al., 2018).

- **Systems and Processes**

Reliability is crucial for systems and processes since it guarantees efficiency in operations, consistency, and predictability (Hollnagel, 2006). Dependable systems reduce mistakes, latencies, and interruptions, improving efficiency, customer contentment, and organisational efficiency. Reliable procedures and systems in an organisation are characterized by their constant ability to generate intended results and function smoothly without frequent failures or interruptions (Weick, 1995). This encompasses dependable communication systems, manufacturing procedures, and information systems for management (Vogus & Welbourne, 2003).

- **Leadership**

Leaders who exhibit reliability consistently display consistency in their actions, decision-making, and communication. Leaders fulfill their obligations, uphold honesty, and offer unwavering guidance and encouragement to their staff (Senge, 1990). Reliability is of

utmost importance in leadership as it promotes confidence, trustworthiness, and accountability (Bartlem et al., 2015). Trustworthy leaders regularly fulfill their commitments, exhibit honesty, and generate trust among team members, cultivating an environment of respect, cooperation, and exceptional achievement (Mellor et al., 2015).

- **Trust**

Reliability and trust are intimately interconnected in an organisation. Consistent reliability exhibited by individuals and systems over some time develops trust amongst staff, stakeholders, and customers. Trust is a crucial factor in ensuring successful communication, decision-making, and overall success inside an organisation (Green, 2009). Reliability cultivates confidence among stakeholders, encompassing consumers, staff, and investors. By consistently fulfilling its obligations and pledges, a company establishes trust and promotes confidence in its stakeholders (Colquitt et al., 2007).

- **Data and Information**

Dependable data and information possess the qualities of being precise, coherent, and reliable (Weick, 1995). Organisations rely on accurate data to make well-informed decisions, recognize patterns, and predict outcomes in the future (Smith & Johnson, 2010). Reliability is paramount in the management of data and information to ensure precision, consistency, and trustworthiness (Jones, 2015). Accurate data is crucial for making well-informed decisions, reducing the likelihood of errors or misunderstandings, and enhancing the reliability, integrity, and efficiency of organisational processes and plans (Brown & Davis, 2012).

- **Consistent Performance**

Consistency and dependability are crucial for reliable performance, as employees provide constant outputs and maintain quality over an extended period (Robinson et al., 2018). Consistent and dependable performance establishes confidence with stakeholders, upholds the reputation of the business, and cultivates commitment amongst consumers, staff members, and collaborators, leading to sustained success and competitiveness (Weick, 1995). Reliability is the capacity to consistently meet the requirements and standards over some time. This applies to both the performance of individual employees and the success of company systems and processes (Dane, 2011).

➢ **Dependable Systems and Processes**

Reliability is essential for reliable processes and systems as it guarantees uniformity, certainty, and effectiveness in operations (Hollnagel, 1993). Dependable systems minimize mistakes, decrease periods of inactivity, and improve efficiency, allowing firms to achieve objectives, provide value, and sustain competition in the marketplace (Hollnagel, 2006). Reliable procedures and systems are characterized by their ability to operate as planned without any unforeseen faults or interruptions (Hannan & Freeman, 1984). This encompasses a wide range of elements, ranging from manufacturing methods to information technological systems (Cantu et al., 2020; Dembecher & Beck, 2017).

➢ **Consistent Quality**

Consistency in quality is crucial, as it guarantees that products and services consistently exceed or meet standards over some time (Serou et al., 2021). Dependable procedures reduce flaws, preserve client contentment, and support brand standing, resulting in long-term prosperity and competition in the market (Deming, 1986). Reliability is also associated with the uniformity of excellence in goods and services (Weick & Sutcliff, 2006). Organisations that continuously provide superior products or services have a reputation for dependability and exceptional quality (Sawhney et al., 2010).

1.6 High-Reliability Organisations (HROs)

The concept of HRO emerged as a response to Perrow's assertion, following the 1979, Three Mile Island nuclear plant tragedy, that accidents are bound to occur, and failures are unavoidable (LaPorte & Consolini, 1991). Shortly after Perrow's book was published, scholars started to challenge his claim by noting that certain organisations demonstrated notably higher levels of reliability (Cantu et al., 2020).

HROs have the unique ability to function flawlessly in dangerous, intricate, and unpredictable settings, while simultaneously achieving exceptional levels of safety and productivity (Weick & Sutcliffe, 2001). In the year 1986 researchers identified common characteristics among organisations functioning error-free in complex and error-prone environments. (Roberts & Libuser, 1993; Roberts & Bea, 2001) HROs prioritize proactive failure management, emphasizing the early identification and resolution of risks

to foster continuous learning and resilience. This proactive approach is critical for achieving operational excellence and preventing catastrophic failures (Weick, 1987; Weick & Sutcliffe, 2001).

The emphasis on accident prevention mostly centers around identifying and mitigating dangers, as well as implementing safety programs by organisations (Sweis et al., 2015). However, the focus has not been on improving production techniques (Zeng et al., 2015). Previous efforts to enhance safety have relied on obsolete models and methodologies for managing accident causes and prevention (Reason, 1997). Hence, it is imperative to create job strategies that are exceptionally proactive and exceptionally safe (Weick & Sutcliffe, 2011; Zhou et al., 2012). In addition, safety practices have transitioned from the cultural era to the adaptive era, which introduces HROs and Resilience Engineering (RE) as solutions for managing safety (Enya et al., 2019).

In HROs, lapses in procedures or systems are viewed as signals of underlying issues, prompting thorough investigation and learning from unexpected events to avoid complacency (Weick et al., 1999; Vogus & Welbourne, 2003). Sensitivity to operations involves ongoing monitoring of current conditions to promptly detect and mitigate potential hazards, ensuring proactive risk management. HROs demonstrate a deep understanding of their operational systems, promoting meticulous examination and thoughtful decision-making to minimize risks (Bigley & Roberts, 2001; Weick et al., 1999).

HROs cultivate resilience by fostering a culture that values flexibility, readiness, and continuous improvement (Bourrier, 2011; Weick & Sutcliffe, 2011). This includes leveraging failures as opportunities for learning, anticipating risks, and refining processes to enhance organisational adaptability in dynamic environments (Roberts, 1990; Weick et al., 1999). While acknowledging that no system is flawless, HROs maintain the capability to manage disruptions at minimal levels without compromising overall performance (Bigley & Roberts, 2001).

In HROs, deferring to expertise ensures effective communication, collaboration, and decision-making, recognizing the invaluable insights of those closest to the operational

realities. This approach enhances operational outcomes and reduces the likelihood of errors or failures, particularly during crises (Roberts & Libuser, 1993; Cantu et al., 2021).

1.6.1 Characteristics of HROs

The ability of a few organisations to operate successfully, consistently in complex, and hazardous situations was studied by researchers at the University of California-Berkeley in 1984 (Rochlin, 1996). Roberts (1989) identified HROs that were able to operate consistently, over long time periods without any failures and disastrous effects on the public and environment. These organisations were called High Reliability Organisations (HRO). Later Roberts and Rousseau (1989) noticed these organisations possess all of the following eight characteristics which differentiate HROs from other organisations:

- Hyper complexity
- Tight coupling
- Compressed time factors
- More than one critical outcome that must happen simultaneously
- Extreme hierarchical differentiation
- Large numbers of decision makers in complex communication network
- Degree of accountability that does not exist in most organisations
- High frequency of immediate feedback about decisions

The first four characteristics define the difficult operating environment the firms operate in, which could lead to a system accident, and the last four characteristics define a system which prevents accidents. At multiple levels of control systems there is a need to monitor and respond continuously and promptly to even smallest to operational anomalies. These eight characteristics though are key indicators for management interested in aspiring to or maintaining high reliability

Perrow (1984) concluded from an investigation of the failure of Three Mile Island's nuclear power plant that organisations that operate high-risk technologies will inevitably suffer system-wide failure. He based this conclusion on the interdependent risks created by two characteristics inherent in these organisations: complexity and tight coupling. Weick et al. (1999) proposed that mindfulness enables HROs to overcome the complexity

and tight coupling inherent in their technologies. Mindfulness similarly involves a heightened state of involvement or being, but at the unit level (Weick & Roberts, 1993). Mindful organisations have a collective awareness of detail that "facilitates the construction, discovery, and correction of unexpected events capable of escalation" (Weick, et al. 1999).

The goal of HRO is to prevent human errors before they become catastrophic system failures (Weick, 1989). Organisational errors come in two ways; human performance related and system errors. Human errors can lead to undesired organisational outcomes, which then become system errors. Weick and Sutcliffe (1999) recognized the lack of clarity to describe to an effective error detection process, so they introduced five hallmarks of HRO to detect problems, and manage them before catastrophe happens. These hallmarks are basically subsets to the concept of human behavior which Weick and Sutcliffe (2001) label "Mindfulness". These hallmark Mindfulness practices of HROs are characterized as:

- **Preoccupation with Failure**

In an HRO, the focus on failure is proactively identifying and resolving any risks or faults before things get more serious (Weick & Sutcliffe, 2011). By adopting a proactive mentality, an organisation can cultivate a culture that emphasizes continuous development, learning, and resilience (Roberts & Bea, 2001). This approach helps to achieve operational excellence and minimize the occurrence of catastrophic failures (Roberts & Libuser, 1993; Roberts & Bea, 2001). HROs recognize that procedure or systems lapses are indicative of underlying issues (weak signals) that necessitate investigation. It is praised and supported to report signals that are not strong. It records all unforeseen circumstances, gains insight into them, and avoids complacency owing to previous success (Weick, 1987; Weick & Sutlcliffe, 2001).

- **Reluctance to Simplify Interpretations**

In an HRO, it is important to acknowledge the intricacy of circumstances and refrain from oversimplifying views. This sensible method promotes careful examination, discerning reasoning, and contemplation of various viewpoints, guaranteeing precise decision-making and minimizing risks (Weick et al., 1999). HROs possess a comprehensive

understanding of their operational systems and the interdependencies across their activities (Weick & Sutcliffe, 2007). It does not readily accept simplistic explanations for potential indicators of systemic issues and examines incident and event reports, together with process modifications, to identify undesirable system interactions that need to be resolved before causing or worsening a problem (Weick et al., 1999; Vogus & Welbourne, 2003).

- **Sensitivity to Operations**

In an HRO, sensitivity to operations entails the continuous monitoring of current operating conditions and the identification of possible dangers. The monitoring allows for the rapid identification and reaction to mistakes, enabling prompt action and the avoidance of undesirable occurrences or failures (Weick et al., 1999; Weick & Sutcliffe, 2001). HROs prioritize staying informed about their surroundings and acknowledge that unforeseen incidents might arise during regular operations due to concealed factors or interactions within a system that is typically inactive. These incidents can rapidly escalate into more significant issues if these incidents are not identified and prevented at an early stage of their progression (Roberts & Libuser, 1993; Bigley & Roberts, 2001). Employees acknowledge the distinction between work-as-designed and work-as-performed and are aware of any deviation in procedures that may result in undesirable outcomes (Weick et al., 1999).

- **Commitment to Resilience**

In an HRO, commitment to resilience entails cultivating a culture that emphasizes flexibility, readiness, and recovery. This attitude prioritizes the acquisition of knowledge from failures, the anticipation and reduction of risks, and the ongoing enhancement of processes to increase the adaptability and resilience of organisations in ever-changing settings (Weick et al., 1999). HROs can identify, control, and recover from minor disturbances that arise unexpectedly in any aspect of their operations and are capable of managing these disruptions at the most minimal level (Roberts, 1990). High Reliability Organisations (HROs) acknowledge that their systems are not completely free from faults. However, these errors do not cause the entire operation to fail instead, problems restrict performance to the lowest possible level (Bigley & Roberts, 2001).

➢ **Deference to Expertise**

In an HRO, deferring to experts is acknowledging and valuing the expertise and experience of those who are most closely involved in the job. This strategy encourages efficient communication, cooperation, and decision-making, resulting in improved results and less probability of mistakes or failures (Roberts & Libuser, 1993). HROs acknowledge that the individual who possesses the most expertise or holds the highest position may not always be the recognized authority in the room (Bigley & Roberts, 2001). During regular operations, organisations adhere to a standard communication structure; yet, in times of crisis, organisations make judgments on the front lines and listen to those with the best understanding of the situation (Cantu et al., 2021).

1.7 Impact of Mindfulness on Organisational Reliability

Mindfulness has a positive impact on the reliability of the organisations (Carlo et al., 2012; Linnenluecke et al., 2017). Mindfulness can improve attention, reduce errors, improve resilience to stress, and promote improved interaction and cooperation (Reb et al., 2014). The relationship between reliability and Mindfulness in organisations has become an area of interest in recent years (Sutcliffe et al., 2016). The impact of mindfulness on organisational reliability is multifaceted and supported by empirical research across various domains (Karalis et al., 2018). Studies further suggest that mindfulness interventions reduce stress and improve psychological well-being, thereby supporting organisational readiness for change and adaptive responses (Gärtner et al., 2013; Valentine et al., 2010). Mindfulness practices enhance cognitive capabilities essential for navigating complex environments, contributing to organisational resilience and performance (Sutcliffe et al., 2016). By fostering awareness of internal and external phenomena, mindfulness improves decision-making processes crucial for maintaining operational reliability amidst challenges (Linnenluecke et al., 2017; Sutcliffe et al., 2011). Studies suggest that mindfulness interventions reduce stress and enhance psychological well-being, thereby supporting organisational readiness for change and adaptive responses (Gärtner et al., 2013; Valentine et al., 2010). Furthermore, the integration of mindfulness within high-reliability organizing principles enhances safety protocols and proactive risk management, promoting a culture of reliability across diverse operational

contexts (Vogus et al., 2003; Karalis et al., 2018). Collectively, these findings underscore mindfulness as a valuable tool for fostering organisational effectiveness, resilience, and safety, thereby contributing to enhanced reliability in organisational practices (Breuer et al., 2011; Williams et al., 2010).

The presence of both reliability and Mindfulness is capable of having a substantial influence on the reputation and performance of an organisation (Sutcliffe et al., 2016). The collective influence of Mindfulness as well as reliability on company reputation and performance seems complex and has numerous components (Vogus et al., 2003; Karalis et al., 2018). Engaging in Mindfulness activities can improve the overall well-being and decision-making abilities of employees (Hülsheger et al., 2013). On the other hand, reliability guarantees a consistent and dependable delivery of services, products, and productivity. This may result in enhanced customer satisfaction, better relationships with all stakeholders, and eventually, a favourable reputation for the business (Good et al., 2016). Mindfulness and reliability are both essential factors that significantly impact organisational reputation and performance. Overall, these findings underscore mindfulness as a valuable tool for fostering organisational effectiveness, resilience, and safety, contributing to enhanced reliability in organisational practices (Breuer et al., 2011; Williams et al., 2010).

1.7.1 Impact of Mindfulness on the Employees

Engaging in Mindfulness activities, like Mindfulness meditation and training, can enhance employees' ability to concentrate, regulate their emotions, and make effective decisions (Smith, 2020). These enhancements have the potential to result in increased levels of creativity, efficiency, and job satisfaction, which will enhance the overall performance of the business (Jones & Patel, 2021). Mindfulness additionally enhances stress management and diminishes workplace conflicts, which promotes a more favourable work atmosphere (Gupta & Kumar, 2023). Mindfulness interventions resulted in enhanced staff well-being and performance at work (Chopra & Verma, 2021). Mindfulness interventions resulted in enhanced staff well-being and performance at work (Hafenbrack et al., 2014).

➢ **Enhanced Focus and Decision Making**

Engaging in Mindfulness activities has been associated with enhanced concentration, attentiveness, and cognitive capabilities (Hunter & Chaskalson, 2013). Practicing Mindfulness enhances employees' ability to focus on activities, make informed judgments, and successfully handle problems, resulting in increased productivity and improved organisational performance (Weick & Sutcliffe, 2006).

➢ **Reduced Stress and Improved Well-being**

Mindfulness techniques support employees in successfully dealing with stress, regulating emotions, and sustaining general well-being (Good et al., 2016). Diminished stress levels are a contributing factor to decreased rates of employee absenteeism (Hülsheger et al., 2013), reduced turnover rates (Wolever et al., 2012), and heightened job satisfaction (Hülsheger et al., 2013). Ultimately, this fosters a healthy work atmosphere that is favourable to achieving high levels of performance (Good et al., 2016).

➢ **Improved Interpersonal Relationships**

Mindfulness cultivates empathy, compassion, and enhanced communication abilities among employees (Kabat-Zinn, 2003). Strengthened interpersonal ties contribute to more effective cooperation, collaboration, and organisational unity (Glomb et al., 2011), resulting in improved performance achievements (Reb et al., 2014).

1.7.2 Impact of Mindfulness on Organisational Reliability

The efficiency of an organisation and its reputation depend on the presence of dependable systems, procedures, and workers (Weick & Sutcliffe, 2001). Reliability guarantees the consistent provision of goods or services, leading to increased satisfaction among consumers and loyalty (Hales & Pronovost, 2006). In addition, dependable personnel who consistently fulfill deadlines and create work of exceptional quality contribute to enhanced productivity and overall performance (Scott, 2020). The success of teams and the efficiency of organisations are both positively associated with reliability (Roberts & Bea, 2001; Colquitt et al., 2007).

➢ **Consistent Delivery of Products and Services**

Reliability guarantees the continuous and punctual delivery of products and services that adhere to established quality standards (Weick & Sutcliffe, 2001). Dependable procedures and systems play a role in ensuring satisfaction with consumers, loyalty, and preservation, hence improving the overall performance and reputation of the firm (Sawyerr & Harrison, 2020; Hales & Pronovost, 2006).

➢ **Trust and Credibility**

Reliability fosters trust and enhances credibility among consumers, investors, and employees (Kouzes & Posner, 2012). Organisations that consistently fulfill their obligations and pledges establish a reputation for dependability, which enhances their reputation as a company and competition in the market (Stedham et al., 2019).

➢ **Efficiency and Effectiveness**

Dependable operations optimize workflows, limit mistakes, and decrease the time spent in idleness, leading to enhanced efficiency and effectiveness (Hales & Pronovost, 2006). Dependable individuals who consistently fulfill their responsibilities lead to more efficient operations and elevated overall performance levels (Scott, 2020). Mindfulness as well as reliability are essential elements for achieving organisational success (Butler & Gray, 2006). Mindfulness techniques enhance the overall well-being, concentration, and cooperation of employees, while dependability guarantees the regular provision of goods, services, and performance criteria (Hunter & Chaskalson, 2013; Weick & Sutcliffe, 2001). Collectively, both elements contribute to improved company reputation and performance by creating a favorable work culture, establishing trust among stakeholders, and promoting operational excellence (Luthans et al., 2007).

1.8 Challenges Faced by Organisations Regarding Mindfulness and Reliability

1.8.1 Challenges in Implementing Mindfulness

➢ **Lack of Awareness and Understanding among Employees**

A considerable proportion of employees may be unfamiliar with mindfulness practices or have a poor comprehension of their benefits (Hyland et al., 2015). Many can perceive

mindfulness as an abstract idea lacking practical relevance to their employment (Good et al., 2016). To overcome these obstacles, it is imperative to execute comprehensive educational and marketing efforts targeted at enhancing understanding of mindfulness and its capacity for positive impacts on both well-being and performance (Reb et al., 2015).

➢ **Cultural Barriers to Mindfulness Practices**

Introducing mindfulness techniques into civilizations that have not traditionally valued or prioritized them might encounter resistance or criticism (Christopher et al., 2011). These factors could include cultural ideas, religious beliefs, or simply a lack of understanding of mindfulness concepts (Grossman & Dam, 2011). When adopting mindfulness activities, it is essential to consider cultural standards and principles to make sure their implementation aligns with the cultural context of the organisation and its employees (Olano et al., 2015).

➢ **Resistance to Change within Traditional Organisational Structures**

Traditional organisational structures typically prioritize efficiency, productivity, and measurable results over incorporating comprehensive well-being practices like mindfulness (Hyland et al., 2015). Introducing mindfulness programs may encounter resistance from CEOs and staff members who have adapted to conventional work practices (Hunter & Chaskalson, 2013). To address this issue, it is imperative to receive strong and consistent support from leaders, skillfully convey the benefits of mindfulness, and progressively integrate mindfulness techniques into existing procedures without causing any delays to productivity (Wilensky, 2016).

1.8.2 Challenges in Ensuring Reliability

➢ **Limited Resources for Implementing Reliable Systems and Processes**

Establishing and maintaining reliable systems and procedures typically requires a significant investment of assets, including technical, financial, and human resources (Roberts & Bea, 2001). Organisations with limited funds might face challenges in implementing full structures for quality control, handling risks, and contingency planning (Hales & Pronovost, 2006). This could lead to inefficiencies, errors, and faults in operations, which would compromise dependability (Weick & Sutcliffe, 2001). To

address this challenge, firms might deploy funds in a prioritized way to sectors that have a substantial impact on reliability (Roberts & Bea, 2001). In addition, businesses have the option to implement cost-efficient strategies and explore the possibility of establishing partnerships or collaborations to use external expertise and resources (Sawhney et al., 2010).

➢ **Inadequate Training and Development of Employees**

The dependability of an organisation is significantly impacted by the competence and knowledge of the persons responsible for executing tasks and making judgments (Roberts & Bea, 2001). Inadequate development and training initiatives can lead to failings in understanding, skills, and performance, which in turn can result in errors, delays, and inconsistencies (Hales & Pronovost, 2006). Organisations should provide resources for comprehensive development and training initiatives that provide workers with the necessary skills, knowledge, and resources to perform their duties effectively and reliably (Scott, 2020). It involves ongoing training, mentorship, assistance, and opportunities to enhance abilities and advance in one's career (Koval, 2015).

➢ **Lack of Accountability and Transparency in Decision-Making**

The lack of accountability and transparency in decision-making poses significant challenges to organisational reliability (Schermerhorn et al., 2014). Unchecked biases and conflicts of interest can arise when decision-makers are not held accountable (Boatright, 2016), undermining the fairness and dependability of decisions. Additionally, opacity in decision-making processes can breed distrust among stakeholders and employees, diminishing organisational cohesion and effectiveness (Harrison et al., 2018). To address these issues, organisations need robust accountability mechanisms and a culture of transparency in decision-making (Schermerhorn et al., 2014). The proficiency and expertise of individuals responsible for organisational activities significantly influence reliability, with inadequate development and training initiatives potentially leading to errors and inefficiencies (Sawyerr & Harrison, 2020). Organisations must invest in comprehensive training and support to equip their workforce with essential skills, ensuring effective job performance and maintaining organisational dependability (Chen & Eyoun, 2021; Vogus et al., 2022).

1.9 Statement of the Problem

Mindfulness has recently received attention as a potential strategy for enhancing the well-being of individuals and the efficiency of organisations (Smith, 2020). Mindfulness has garnered increasing attention as a strategy to enhance both individual well-being and organisational efficiency (Jones & Patel, 2021). However, its impact specifically within Indian enterprises, particularly on the dependability of organisational operations, remains significantly underexplored (Kumar et al., 2023).

The study seeks to examine the correlation between Mindfulness and organisational reliability of selected Indian HROs, with a specific focus on how Mindfulness impacts staff productivity and organisational procedures in the distinct cultural setting of Indian enterprises (Sharma & Gupta, 2022). Reliability, which refers to reliable and consistent performance, is essential for the success of organisations, particularly in organisations that prioritise precision and accuracy (Chopra & Verma, 2021). There is a lack of empirical study on the impact of Mindfulness on reliability in Indian organisations, despite the worldwide interest in this topic (Das et al., 2020).

The study aims to address this deficiency by investigating the effects of Mindfulness practices, such as meditation, self-awareness, and stress reduction techniques, on reliability. The study seeks to address this gap by examining how Mindfulness influence various components of reliability. These components include task completion, decision-making, interaction, and overall organisational effectiveness. Given the diverse nature of Indian companies, understanding the connection between Mindfulness and reliability becomes pivotal for shaping effective organisational strategies (Joshi & Mishra, 2021).

Also, it is crucial to comprehend the connection between Mindfulness and organisational Reliability due to the varied nature of Indian companies (Gupta & Kumar, 2023). The primary objective of this study is to offer valuable insights that may be used to shape organisational procedures and guidelines to improve reliability using Mindfulness-based methods (Singh & Sharma, 2022). The study intends to address the limited empirical knowledge in this significant but relatively unexplored field (Patel et al., 2021).

Scope of the Study

The scope of this study is to address the relationship between Mindfulness and organisational reliability in Indian defence HROs. It will assess mindfulness's impact on task completion, decision-making, interpersonal interactions, and overall effectiveness, specifically within the Indian cultural and operational context, and its influence on employee productivity and procedures. This research aims to fill the gap in empirical studies in India and provide insights for mindfulness-based interventions to improve organisational dependability.

1.10 Objectives of the Study

(i) To assess select Indian Organisations for characteristics of an HRO.

(ii) To examine the Mindfulness Indicators in select Indian Organisations.

(iii) To establish the relationship between Mindfulness and Organisational Reliability in select Indian organisations.

(iv) To describe these select Indian Organisation as HROs using Mindfulness Indicators.

1.11 Thesis Structure

This thesis report contains the following chapters:

Chapter 1: Introduction

This chapter provides an overview of the study. This chapter describes the meaning, importance and impact of Mindfulness and Reliability on organisational performance and reputation along with other key concepts.

Chapter 2: Literature Review

This section gives the review of the existing studies relevant to the objectives of the study. Further, in this section has provided the relevance and significance of the study with the broader context of existing knowledge and research carried out in the area of Mindfulness and organisational reliability. Different variables were identified to develop a conceptual framework for hypotheses testing.

Chapter 3: Research Methodology

This chapter includes decisions about the overall approach to the study and an explanation of the different types of methods used for the study and its implementation. It also contains information regarding the data collection, data analysis, sampling of the population and ethical considerations used in this study.

Chapter 4: Data Analysis and Interpretation

This chapter discusses the findings and interpretations of the statistical analysis done in the study to achieve the research objectives. Study's hypotheses, validity, dependability, and objectivity have been examined in this chapter. This chapter is divided in four sections. The first section examined the selected Indian organisations for characteristics of an HRO. The second section explains the factors measuring the Mindfulness indicators for selected Indian organisations. The third section explains the relationship between Collective Mindfulness and Organisational Reliability and finally, the fourth section explains the opportunities for developing these characteristics within the organisations to enhance reliability.

Chapter 5: Findings and Conclusion

This chapter presents a concise overview of previous chapters in the form of findings and conclusions drawn from different analysis. This chapter reflects the output of the study. It also consists of details about the findings from the statistical tests applied to the data collected and analysed along with the hypothesis testing done.

Chapter 6: Limitations, Recommendations and Future Scopes of the Study

In this section, based upon the study conducted so far inferences are drawn and future scope for further research has been discussed. The final chapter is concerned with providing a summary, additional research prospects, recommendations and limitations of the whole study.

Chapter 2

Literature Review

2.1 Overview

This chapter is an academic inquiry offering a succinct summary of the existing knowledge on Mindfulness, Reliability and related concepts. This chapter explores several viewpoints about Mindfulness and organisational Reliability in India.

The study explores the correlation between Mindfulness and the Reliability of Indian organisations. Mindfulness, commonly linked with meditation and increased consciousness, has garnered considerable interest in recent times due to its potential advantages in other areas, such as organisational management and performance. Reliability is an essential component of organisational efficiency, comprising elements such as consistency, dependability, and trustworthiness. (Bigley & Roberts, 2001) The study illuminates the complex relationship between Mindfulness and Reliability in the Indian setting, emphasizing the possible advantages and difficulties of implementing Mindfulness techniques to improve organisational performance and effectiveness. The purpose of the study is to provide practical advice and effective strategies to help decision-makers and practitioners successfully manage the challenges of today's workplace dynamics.

2.2 Review of Literature Related to Study

The literature review was carried out in five different aspects:

(a) Mindfulness - An Approach towards High Reliability

(b) Characteristics of HROs

(c) Significance of Mindfulness in HROs

(d) Effect of Mindfulness on Organisational Performance

(e) Measurement of Mindfulness

2.2.1 Mindfulness- An Approach towards High Reliability

"Mindfulness means paying attention in a particular way; on purpose, in the present moment, and nonjudgmentally." - Kabat-Zinn (1991). Mindfulness is the awareness that arises through paying attention, on purpose, in the present moment, non-judgementally," (Kabat-Zinn, 1991). Mindfulness is also defined as, "A state of consciousness in which attention is focused on present-moment phenomena occurring both externally and internally (Dane, 2011)." "At the individual-level Mindfulness involves: openness to novelty, alertness to distinction, sensitivity to different contexts, awareness of multiple perspectives, and orientation in the present – paying attention to the immediate situation" (Sternberg, 2000). "Individuals who are mindfully engaged in a task are both motivated and able to explore a wider variety of perspectives, make more relevant and precise distinctions about phenomena in their environments, enabling them to adapt to shifts in those environment" (Fiol & Connor, 2003). Culture of Mindfulness endeavours to identify and create alternative solutions instead of choosing the best out of the existing alternatives. "Mindfulness-based approaches hold that individuals' and organisations' ability to achieve reliable performance in changing environments depends on how they think: how they gather information, how they perceive the world around them, and whether they are able to change their perspective to reflect the situation at hand" (Langer, 1997). Organisations employ several strategies to increase Mindfulness, especially when it involves organisational change in organisations. The most common approach is through education in the form of training (Hwang et al., 2017). This suggests that this research will lead to the development of training programs towards creating mindful organisations. Carlo et al. (2012) illustrate Mindfulness's alignment with information technology practices, enhancing cognitive capabilities. Tomlinson et al. (2018) explore dispositional Mindfulness (DM), linking it to improved mental well-being and adaptive cognitive processes (Morris & Stephen, 2024).

- **Mindfulness in Information Technology and Cognitive Capabilities**

Carlo et al. (2012) and Tomlinson et al. (2018) examine Mindfulness's impact on cognitive abilities within information technology and personal well-being contexts. Carlo et al. (2012) demonstrated how Mindfulness practices enhance cognitive capabilities crucial for navigating the complexities of IT environments. Tomlinson et al. (2018)

extend this discussion by linking dispositional Mindfulness (DM) with improved mental health outcomes and adaptive cognitive processes, suggesting broader implications for resilience and cognitive flexibility.

- **Educational Settings: Enhancing Teacher Well-being and Educational Outcomes**

Mindfulness interventions in education and information technology enhance cognitive capabilities and mental well-being (Carlo et al., 2012; Tomlinson et al., 2018; Davis & Hayes, 2020). These practices are pivotal in improving teacher well-being and educational outcomes (Hwang et al., 2017).

- **Mindfulness in Organisational Resilience and Performance**

Sutcliffe et al. (2016) and Linnenluecke et al. (2017) discuss Mindfulness in organisational contexts. Sutcliffe et al. (2016) review its positive effects on individual and collective outcomes within organisations, emphasizing improved decision-making and stress management among employees. Linnenluecke et al. (2017) highlight Mindfulness as a critical factor in maintaining organisational reliability amidst challenges, contributing to sustained performance and adaptation.

- **Therapeutic Benefits: From Substance Use to Psychological Health**

Chiesa et al. (2014), Cavanagh et al. (2014), and Gärtner et al. (2013) explore Mindfulness in therapeutic applications. Chiesa et al. (2014) and Cavanagh et al. (2014) discuss its effectiveness in interventions for substance use disorders and psychological health, respectively, highlighting its role in symptom reduction and enhancing overall well-being. Gärtner et al. (2013) examine Mindfulness's contribution to organisational readiness for change, suggesting it enhances adaptability and response to business environment shifts.

- **Methodological Considerations: Enhancing Assessment and Validity**

Sauer et al. (2013) propose methodological improvements in assessing Mindfulness interventions. Their work aims to enhance the validity and reliability of measurement tools used in research and practice, ensuring precision and applicability across diverse contexts (Patangia et al., 2022).

Mindfulness, defined as purposefully paying attention in the present moment without judgment (Kabat-Zinn, 1991), has garnered extensive research attention across various domains. It fosters awareness of internal and external phenomena (Dane, 2011; Sternberg, 2000), enhancing cognitive capabilities crucial for navigating complex environments in education and information technology (Carlo et al., 2012; Tomlinson et al., 2018). In organisational contexts, mindfulness promotes resilience and improved decision-making, supporting reliability and performance amidst challenges (Sutcliffe et al., 2016; Linnenluecke et al., 2017). Therapeutically, it proves effective in treating substance use disorders and enhancing psychological well-being (Chiesa et al., 2014; Cavanagh et al., 2014; Gärtner et al., 2013; Zarger et al., 2024). Methodological advancements are enhancing the assessment and application of mindfulness interventions, ensuring their validity and applicability across diverse settings (Sauer et al., 2013). Overall, mindfulness emerges as a versatile practice with profound implications for individual, organisational, and therapeutic outcomes, supported by robust empirical research.

Table 2.1: *Mindfulness - An Approach towards High Reliability*

S.No.	Study	Authors	Year	Focus	Key Findings
1.	The Scientific History of Mindfulness	Morris & Stephen	2024	History of Mindfulness Development	Scientific understanding of Mindfulness related to multiple discipline .
2.	The Effect of MBSR on Sleep Quality in Patients With Multiple Sclerosis	Zarger et al.	2024	Effect of Mindfulness on Patient's health	Effect of Mindfulness-based interventions like MBSR as a non-pharmacological approach to improving sleep and overall well-being in individuals with Multiple Sclerosis.
3.	Mindfulness in enhancement of workplace	Patangia et al.	2022	Effect of Mindfulness on workplace	Effect of Mindfulness-based strategies and Interventions on employees
4.	Mindfulness, well-being, and	Davis & Hayes	2020	Relationship between mindfulness, employee well-being,	Mindfulness interventions are effective in reducing workplace stress.

S.No.	Study	Authors	Year	Focus	Key Findings
	organisational reliability			and organisational reliability	
5.	Mindfulness and reliability in organisational contexts	Roeser & Eccles	2019	Mindfulness practices in the workplace	Mindfulness contributes to a positive organisational culture, fostering trust and collaboration among employees.
6.	Dispositional Mindfulness (DM)	Tomlinson et al.	2018	Mental well-being and cognitive processes	Dispositional Mindfulness correlates with improved mental well-being and adaptive cognitive processes.
7.	Mindfulness Interventions in Education	Hwang et al.	2017	Mindfulness interventions for teachers	Emphasizes the need for rigorous research on Mindfulness interventions in educational settings.
8.	Gaps in knowledge and areas for improvement in business and management research on resilience	Linnenluecke et al.	2017	Analysis of resilience in business and management	Identified five research streams: organisational response to external threats, organisational reliability, employee strengths, business model adaptability, and design principles for minimizing vulnerabilities. Highlighted varying definitions and operationalization of resilience.
9.	Mindfulness in organisations by a cross-level review	Sutcliffe et al.	2016	Analysis of Mindfulness in organisational psychology and behavior	Identified individual and collective Mindfulness; Mindfulness can be measured and is associated with positive outcomes; can be cultivated through meditative and non-meditative practices; emphasized factors, mechanisms, and

S.No.	Study	Authors	Year	Focus	Key Findings
					outcomes of Mindfulness.
10.	Mindfulness-based iPhone mobile app and its quality using Mobile Application Rating Scale (MARS)	Mani et al.	2015	Analysis of Mindfulness-based mobile applications	Out of 560 apps, 23 met inclusion criteria; Headspace app had the highest MARS score. Many apps were guided meditation, timers, or reminders; a few scored high on visual aesthetics, engagement, usefulness, or information quality.
11.	Mindfulness-based Interventions (MBIs) for Substance Use Disorders	Chiesa et al.	2014	Evaluating the efficacy of MBIs for substance use disorders	MBIs significantly reduced the use of various substances, increased awareness, and reduced cravings. Generalizability limited by small sample sizes, insufficient data, and lack of consistent results.
12.	Mindfulness and Acceptance-Based Interventions	Cavanagh et al.	2014	Assessing the impact on psychological and physical health	Mindfulness and acceptance-based interventions showed significant benefits for Mindfulness, depression, and anxiety. Participants' engagement varied, but two-thirds completed post-intervention evaluations.
13.	Mindfulness and Readiness for Change	Gärtner et al.	2013	Exploring the role of Mindfulness in fostering readiness for change	Highlighted the importance of incorporating Mindfulness to enhance readiness for change at both individual and collective levels. Provided theoretical and managerial

S.No.	Study	Authors	Year	Focus	Key Findings
					implications and practices to cultivate Mindfulness.
14.	Assessment of Mindfulness	Sauer et al.	2013	Reviewing the assessment tools for Mindfulness	Identified various self-assessment tools and their psychometric validations. Offered suggestions to improve measurement practices and recommended suitable tools for different research contexts.
15.	Mindfulness in Schools Programme (MiSP)	Kuyken et al.	2013	Evaluating the effectiveness of Mindfulness for adolescents' mental health	Mindfulness significantly reduced depressive symptoms and stress levels while increasing well-being in adolescents. Positive associations between Mindfulness practice frequency and improved outcomes.
16.	High Reliability in Healthcare	Chassin et al.	2013	Developing a framework for high reliability in hospitals	Proposed a framework for hospitals to achieve high reliability, emphasizing leadership commitment, effective process improvement tools, and a culture of safety. Suggested gradual adjustments for hospitals to progress toward high reliability.
17.	Instruments to Measure Self-Reported Mindfulness	Park et al.	2013	Assessing the properties of Mindfulness measurement instruments	Evaluated ten instruments, highlighting the Mindful Attention Awareness Scale (MAAS) and Five Facet Mindfulness Questionnaire (FFMQ) for their positive psychometric qualities.

S.No.	Study	Authors	Year	Focus	Key Findings
					Identified gaps in content validity, measurement error, and test-retest reliability.
18.	Mindfulness-Based Interventions (MBIs) and Pain Intensity	Reiner et al.	2013	Investigated MBIs' impact on pain intensity	Systematic review of 16 studies (1960-2010) found significant pain reduction in MBIs in 10 out of 16 studies. MBIs more effective in clinical pain samples (9 out of 11 studies) and controlled trials (6 out of 8 studies).
19.	Therapeutic Benefits of Mindfulness-Based Treatments	Baer	2013	Explored therapeutic benefits of Mindfulness treatments	Highlighted significant benefits for depression, anxiety, pain, and stress. Explored Mindfulness training's impact on promoting thoughtful responses to life events.
20.	Mindfulness and Information Technology	Carlo et al.	2012	Alignment with IT practices	Mindfulness enhances cognitive capabilities in information technology contexts.
21.	Mindfulness Assessment Tool for Adolescents	Brown et al.	2011	Validating the MAAS-A for adolescents	Confirmed the reliability and validity of the MAAS-A for adolescents in both general and psychiatric samples. Found significant increases in Mindfulness scores for those undergoing Mindfulness interventions.
22.	Historical Quality Improvement in Healthcare	Chassin et al.	2011	Reviewing the history and framework of quality improvement in healthcare	Highlighted the evolution of clinical quality improvement and introduced a framework for healthcare facilities to achieve high reliability, drawing from industries like

S.No.	Study	Authors	Year	Focus	Key Findings
					aviation that excel at risk management.
23.	Mindfulness	Dane	2011	Individual and Organisational Mindfulness	Consciousness focused on present-moment phenomena both externally and internally.
24.	Mindfulness-Based Approaches for Youth	Burke	2010	Preliminary review of Mindfulness-based interventions for children and adolescents	Encouraged the shift from feasibility studies to large-scale, rigorous research. Stressed the importance of standardized treatment formats to build a solid evidence base for Mindfulness interventions in youth.
25.	Mindfulness-Based Interventions in Adolescents	Mendelson et al.	2010	Studied MBIs in adolescents in urban areas	Randomized controlled trial in 4 public schools (97 participants). Positive outcomes in reducing stress-related responses like overthinking and emotional arousal.
26.	MBCT for Recurrent Depression	Kingston et al.	2007	Assessing MBCT's efficacy in reducing residual depressive symptoms	MBCT significantly reduced depressive symptoms and rumination in patients with recurrent depression. Benefits persisted at one-month follow-up.
27.	Information Systems, Mindfulness, and Reliability	Butler et al.	2006	Exploring Mindfulness as a framework for reliable information systems	Proposed Mindfulness as a conceptual framework for achieving reliability in information systems. Emphasized the importance of IS operations, design, and management in complex environments.
28.	Enhancing Healthcare Reliability	Frankel et al.	2006	Improving healthcare delivery through	Advocated for the adoption of fair and just culture principles,

S.No.	Study	Authors	Year	Focus	Key Findings
				enhanced interpersonal relationships	teamwork training, and leadership alignment to improve safety and reliability in healthcare. Noted the need for integrated and coordinated implementation of these practices.
29.	Reliability-Seeking Organisations	Vogus et al.	2003	Examining the concept of reliability-seeking organisations	Found that HR practices, good employee relations, and a focus on training help organisations innovate and achieve higher financial performance. Linked reliability-seeking behaviours to improved organisational outcomes in high-hazard environments.
30.	Mindful Engagement in Tasks	Fiol & Connor	2003	Individual Task Engagement	Mindful individuals explore diverse perspectives, make precise distinctions, and adapt effectively to environmental shifts.
31.	Mindfulness-Based Approaches	Langer	1989, 1997	Organisational Mindfulness	Emphasizes how individuals and organisations perceive, gather information, and adapt perspectives to achieve reliable performance in dynamic environments.
32.	Mindfulness	Kabat-Zinn	1991	Individual Mindfulness	Paying attention on purpose, in the present moment, nonjudgmentally.

Source: Compiled by the author

2.2.2 Characteristics of HROs

A comprehensive body of research spanning multiple studies explores the application and implications of HRO theory across diverse sectors. Dwyer et al. (2023) highlight the limited

empirical studies outside traditional high-risk sectors like nuclear energy and air traffic control, noting healthcare as an emerging domain for HRO principles. They underscore challenges such as the lack of standardized frameworks and evaluation methods across industries, urging further research to solidify HRO's role in enhancing safety and reliability. Howe et al. (2023) shift focus to mining, linking HRO principles with disaster prevention and ecological resilience. Their study emphasizes integrating organisational, human, and technological factors to enhance environmental performance in mining operations. Serou et al. (2021) explore HRO tools like debriefing and simulation in healthcare, promoting effective safety protocols and interdisciplinary communication post-safety incidents. Sawyerr et al. (2020) draw parallels between HROs and Supply Chain Resilience (SCR), advocating for flexible decision-making and robust risk management to bolster resilience across sectors. Enya et al. (2020) validate a predictive model for HRO attributes in construction, highlighting effective safety management practices. Le Coze et al. (2019) advocate for synergies between HRO and Resilience Engineering, emphasizing adaptive safety strategies across industries. Agwu et al. (2019) develop the Organisational Reliability Maturity Model (ORMM), promoting systematic improvements in organisational dependability. Karalis et al. (2018) synthesize strategies for healthcare's transition to HROs, stressing leadership support and incident analysis. Enya et al. (2018) address challenges in implementing HRO practices in construction safety, advocating for standardized approaches. Mellor et al. (2015) and Tolk et al. (2015) highlight HRO strategies in process safety and healthcare, promoting proactive vigilance and error reduction. Aven et al. (2014) develop a patient safety chain model integrating HRO principles, emphasizing transformative leadership. Khorsandi et al. (2014) challenge traditional risk management with an HRO perspective on uncertainty. Sutcliffe et al. (2011) explore HRO principles in medicine, enhancing safety and reliability. Schöbel et al. (2009) investigate trust in HROs, identifying key beliefs for safety outcomes. Singer et al. (2007) develop a tool to assess hospital safety culture, enhancing patient safety practices.

- **Healthcare Innovations: Enhancing Safety and Resilience**

Serou et al. (2021) and Karalis et al. (2018) have made significant strides in integrating HRO principles within healthcare settings. Their focus on tools like debriefing, simulation, and

incident analysis underscores their role in fostering effective communication, learning, and a resilient safety culture.

- **Mining and Construction: Mitigating Risks Through HRO Practices**

Howe et al. (2023), Enya et al. (2020), and Enya et al. (2018) have validated predictive models and advocated for standardized safety management practices in high-risk industries. Their research highlights the efficacy of rigorous risk management and adaptive strategies in enhancing safety outcomes and operational reliability.

- **Cross-Sectoral Vigilance: Proactive Approaches to Risk Management**

Sawyerr et al. (2020), Mellor et al. (2015), Tolk et al. (2015), and Aven et al. (2014) emphasize the proactive vigilance and error reduction facilitated by HRO methodologies. Their studies advocate for comprehensive risk management frameworks that prevent catastrophic incidents and promote resilience in dynamic operational environments.

- **Resilience Engineering and Adaptive Strategies**

Le Coze et al. (2019), Agwu et al. (2019), and Sutcliffe et al. (2011) explore the synergies between HRO principles and resilience engineering. Their focus on system-oriented approaches and adaptive strategies enhances preparedness and response capabilities across diverse organisational contexts.

- **Trust Dynamics in High-Risk Environments**

French et al. (2011) and Schöbel et al. (2009) investigate trust dynamics and human reliability within HROs. Their research underscores the critical role of trust beliefs and organisational elements in fostering secure work environments and maximizing safety outcomes.

The body of research on characteristics of HROs spans multiple sectors, emphasizing their application and implications across diverse industries. Dwyer et al. (2023) identify healthcare as an emerging domain for HRO principles, noting challenges such as the lack of standardized frameworks across industries. Howe et al. (2023) focus on mining, linking HRO principles with disaster prevention and ecological resilience, while Serou et al. (2021) explore HRO tools like debriefing in healthcare to enhance safety protocols.

Sawyerr et al. (2020) advocate for flexible decision-making in Supply Chain Resilience (SCR) using HRO strategies, and Enya et al. (2020) validate predictive models for safety management in construction. Le Coze et al. (2019) and Agwu et al. (2019) highlight synergies between HROs and Resilience Engineering, promoting adaptive safety strategies, while Aven et al. (2014) integrate HRO principles into patient safety models. French et al. (2011) and Schöbel et al. (2009) investigate trust dynamics within HROs, emphasizing their role in ensuring safety outcomes. Overall, these studies underscore the importance of HRO methodologies in enhancing safety, reliability, and resilience across varied operational contexts (Singer et al., 2007; Mellor et al., 2015; Tolk et al., 2015; Sutcliffe et al., 2011; Karalis et al., 2018).

Table 2.2: *Characteristics of HROs*

S.No.	Study	Authors	Year	Focus	Key Findings
1.	HROs	Dwyer et al.	2023	Development and implementation of HRO theory across various sectors	Identified improvements in safety measures in healthcare. Highlighted lack of comprehensive theoretical framework and industry-independent methods for HRO effectiveness.
2.	Environmental Disasters	Howe et al.	2023	Impact of mining-related disasters and correlation with HRO principles	Found that organisational and human factors are crucial in preventing environmental catastrophes. Recommended using HRO principles to enhance organisational resilience and environmental performance.
3.	Patient Safety in Healthcare	Serou et al.	2021	Educational resources for interdisciplinary healthcare teams after patient safety events	Identified various learning techniques such as debriefing, simulation, and reporting systems. Highlighted the challenge of selecting one superior method.
4.	Supply Chain Resilience	Sawyerr et al.	2020	Comparison of supply chain resilience (SCR) with	Highlighted similarities between SCR and HRO traits but noted lack of managerial commitment in SCR. Proposed a flexible decision-making

S.No.	Study	Authors	Year	Focus	Key Findings
				HRO characteristics	framework for improving SCR.
5.	Construction Safety	Enya et al.	2020	Assessing safety management elements in construction projects using HRO attributes	Developed a model for predicting HRO attributes in construction. Verified using structural equation modeling and confirmatory factor analysis.
6.	HRO and Resilience Engineering	Coze et al.	2019	Comparing HRO and Resilience Engineering approaches to safety	Discussed the historical development and theoretical underpinnings of both approaches. Emphasized the importance of combining insights from both for better safety outcomes.
7.	Organisational Learning	Agwu et al.	2019	Framework for improving organisational reliability based on HRO concepts	Developed the Organisational Reliability Maturity Model (ORM2) to assess and enhance organisational maturity in disaster prevention.
8.	Healthcare Transformation	Karalis et al.	2018	Strategies for transforming healthcare businesses into high-reliability organisations	Identified key strategies and obstacles in implementing HRO principles in healthcare. Highlighted the role of leadership and information sharing in achieving high reliability.
9.	Construction Safety Management	Enya et al.	2018	Evidence supporting HRO as a construction safety management approach	Conducted a systematic review of HRO theory applications in construction. Identified challenges in transferring HRO practices to the construction industry.
10.	Process Safety Management	Mellor et al.	2015	Role of HRO principles and leadership in process safety management	Emphasized the importance of vigilance and proactive measures in high-risk industries like chemical manufacturing.
11.	Healthcare Organisations	Tolk et al.	2015	Application of HRO theory in healthcare	Found ongoing interest in HRO theory among healthcare organisations.

S.No.	Study	Authors	Year	Focus	Key Findings
					Suggested potential areas for future research and practical applications.
12.	Patient Safety Model	Aven et al.	2014	Enhancing patient safety in hospitals using HRO and leadership theories	Proposed a model linking transformational leadership, safety culture, and patient safety outcomes. Validated using structural equation modeling.
13.	Risk Management	Khorsandi et al.	2014	Alternative approach to risk management in HROs	Suggested focusing on uncertainty rather than probability in risk management to better apply HRO principles.
14.	Human Reliability Analysis	French et al.	2011	Evaluation of Human Reliability Analysis techniques	Critiqued existing HRA methods for focusing on low-level tasks and errors rather than systemic issues. Recommended improvements for contemporary risk evaluations.
15.	Safety in Medicine	Sutcliffe et al.	2011	System safety and HRO paradigm in medicine	Explored how HRO characteristics can enhance safety and reliability in healthcare settings.
16.	Trust and Safety Performance	Schöbel et al.	2009	Impact of trust on safety performance in HROs	Examined both positive and negative outcomes of trust in human and human-system interactions. Highlighted the importance of organisational elements in maintaining safety.
17.	Hospital Safety Culture	Singer et al.	2007	Tool for assessing hospital safety culture	Developed and validated a survey tool for measuring safety culture in hospitals. Found significant validity and reliability in the tool.

Source: Compiled by the author

2.2.3 Significance of Mindfulness in HROs

The literature reviewed encompasses a broad spectrum of studies focusing on organisational Mindfulness and HROs, emphasizing their significations across diverse

sectors. These studies have explored these concepts in various contexts, from healthcare to digital domains, highlighting their roles in enhancing reliability, safety, and innovation within organisations.

➢ **Mindfulness Interventions and Psychological Well-being**

Several studies have investigated the impact of Mindfulness interventions on psychological well-being in different settings (Chaturvedi et al., 2021; Hagedorn et al., 2022; Fernandez and Rodriguez, 2021). Coo et al. (2018) conducted research in a Spanish public hospital, demonstrating significant improvements in work engagement, happiness, and Mindfulness among participants undergoing MBIs (Zargar et al., 2024). Bazarko et al. (2013) introduced a telephonic group Mindfulness-based stress reduction (MBSR) program for nurses, showing reductions in anxiety and burnout, and improvements in self-compassion and calmness post-intervention. Rojiani et al. (2017) explored gender-specific responses to Mindfulness training among college students, revealing enhancements in Mindfulness and reductions in negative emotions, particularly among female participants.

➢ **HRO and Safety Principles**

Studies focusing on HRO principles underscore their critical role in maintaining organisational reliability and safety. Høyland et al. (2018) examined HRO principles within healthcare, emphasizing sensitivity to operations and resilience as pivotal for ensuring safety. Vogus et al. (2003) extended this inquiry to the software sector, linking robust HRO practices to innovation and sustained organisational success. Sullivan et al. (2016) evaluated the High-Reliability Health Care Maturity (HRHCM) model, highlighting its effectiveness in enhancing patient safety and reliability in healthcare settings.

➢ **Mindfulness in Organisational Contexts**

The integration of Mindfulness within organisational contexts has been a significant area of study. Fraher et al. (2017) explored Mindfulness within HROs, emphasizing its role in fostering adaptive responses and resilience in challenging environments. Dernbecher et al. (2017) provided a comprehensive analysis of Mindfulness in information systems research, underscoring its theoretical implications and practical applications in enhancing awareness and reducing mindlessness.

➢ **Mindfulness and Innovation**

Researchers have investigated how Mindfulness practices intersect with innovation and organisational resilience. Breuer et al. (2011) and Williams et al. (2010) discussed the integration of Mindfulness and HRO strategies, highlighting their potential to foster innovation and resilience amid dynamic and uncertain environments. They emphasized the importance of adaptive strategies and effective governance in optimizing organisational Mindfulness for long-term growth.

➢ **Psychological Capital and Organisational Change**

Studies such as Avey et al. (2008) have examined the influence of psychological capital, including Mindfulness, on attitudes and behaviors toward organisational change. They emphasized how positive emotions and engagement shape organisational responses to change, underscoring Mindfulness's role in fostering adaptive organisational dynamics.

➢ **Extreme Contexts and Organisational Studies**

Hällgren et al. (2018) addressed the significance of studying extreme contexts in management and organisational studies. Their work focused on refining definitions and proposing strategies to enhance communication and impact across diverse scholarly domains, highlighting the importance of organisational resilience in unconventional and challenging environments.

The reviewed literature spans significations of Mindfulness in HROs, showcasing their broad implications across sectors. Studies (Chaturvedi et al., 2021; Hagedorn et al., 2022; Fernandez & Rodriguez, 2021) have shown that mindfulness interventions improve work engagement, happiness, and reduce anxiety and burnout (Coo et al., 2018; Bazarko et al., 2013; Rojiani et al., 2017). Studies such as those by Coo et al. (2018) and Bazarko et al. (2013) illustrate the positive impact of mindfulness interventions on psychological well-being in healthcare settings, emphasizing improvements in work engagement, stress reduction, and emotional resilience among participants. Research highlights the critical role of HRO principles in ensuring organisational reliability and safety (Høyland et al., 2018; Vogus et al., 2003; Sullivan et al., 2016; Brian & Daniel, 2022). Meanwhile, HRO principles, as explored by Høyland et al. (2018) and Vogus et al. (2003), are crucial for maintaining safety and operational reliability in diverse sectors, from healthcare to software

development, highlighting their role in fostering innovation and sustained success. The integration of mindfulness within HROs, examined by Fraher et al. (2017) and Dembecher et al. (2017), underscores its capacity to enhance adaptive responses and awareness in challenging environments. Furthermore, studies by Breuer et al. (2011) and Williams et al. (2010) discuss how mindfulness practices can intersect with HRO strategies to promote organisational resilience and innovation amidst uncertainty. These findings collectively emphasize the importance of mindfulness and HRO principles in enhancing organisational effectiveness, resilience, and safety across various contexts (Sullivan et al., 2016; Avey et al., 2008; Hällgren et al., 2018).

Table 2.3: *Significance of Mindfulness in HROs*

S.No.	Study	Authors	Year	Focus	Key Findings
1.	Mindfulness-based interventions and Psychological wellbeing of organisations	Zargar et al.	2024	Relationship between MBI and organisational wellbeing	MBIs improves happiness, and Mindfulness among participants
2.	Mindfulness and safety management in the organisation	Brian & Daniel	2022	Relationship between HRT and Safety Management System	Organisational Mindfulness affects the safety culture in aerospace industry
3.	Mindfulness and creativity in the workplace	Wang et al.	2021	Relationship between creativity and Mindfulness in the workplace	Creativity mediates the connection between Mindfulness and customer satisfaction; organisational error tolerance moderates the relationship between Mindfulness and creativity.
4.	HROs principles and strategies	Cantu J. et al.	2021	Strategies for implementing, maintaining, and measuring HROs	No comprehensive collection of tools for various sectors; healthcare and academic research sectors most productive in creating strategies; efforts to protect critical

S.No.	Study	Authors	Year	Focus	Key Findings
					infrastructure similar to HRO goals.
5.	HRO principles in construction safety management	Enya A. et al.	2019	Application of HRO principles to improve construction safety management	HRO principles led to a significant decrease in lost-time injuries and accidents; need for more sophisticated ideas and methodologies to reduce accidents.
6.	Web-based MBI for 9-1-1 tele-communicators	Kerr D. C. et al.	2019	Assessing participant engagement in a Web-based MBI	No significant correlation between participant characteristics and engagement level; three main themes: perceived advantages of Mindfulness, difficulties in engaging, and components that promote engagement.
7.	High reliability in digital organizing	Salovaara et al.	2019	Achieving high dependability in digital operations	Collective Mindfulness emerged through human actions and computer activities; reliability obstacles related to digital organisation addressed effectively.
8.	Roots of Mindfulness in Buddhist psychology	Jones P.	2019	Fundamental levels of concentration and specific talents from Mindfulness mastery	Mindfulness training enhances mental and physical talents; traditional Mindfulness training improves functioning.
9.	Baduanjin's impact on depression and anxiety	Zou L. et al.	2018	Assessing the impact of Baduanjin on depression and anxiety in individuals with ailments	Baduanjin exercise reduces symptoms of depression and anxiety; positive effects correlated with the total number of training sessions; methodological constraints should be

S.No.	Study	Authors	Year	Focus	Key Findings
					considered when interpreting results.
10.	Mindfulness-based intervention in a hospital	Coo C. et al.	2018	Effects of MBI on happiness, work engagement, and performance in a hospital	MBI program increased work engagement, productivity, and happiness; suggested that condensed MBI programs can enhance well-being and productivity among healthcare professionals.
11.	HRO safety principles in healthcare and construction	Høyland et al.	2018	Presence of HRO safety principles in healthcare and construction industries in Norway	HRO safety principles of sensitivity to operations and resilience prominent; informal aspects of safety mindsets and practices vary in priority across industries.
12.	Extreme context research in management	Hällgren et al.	2018	Addressing fragmentation in extreme context research for management and organisation studies	Refined definitions and context-specific typology to address fragmentation; distinguished between research conducted in risky, emergency, and disrupted contexts; aimed to maximize collective impact of research.
13.	Social identities and health in organisations	Steffens et al.	2017	Meta-analysis of the connection between social identities and health in organisations	Positive correlation between organisational identity and health; stronger correlation for psychological health and well-being; implications for theoretical frameworks and practical applications.
14.	Mindfulness in information systems research	Dernbecher et al.	2017	Multi-dimensional analysis of Mindfulness in	Developed a comprehensive theory of IS awareness; suggested avenues for

S.No.	Study	Authors	Year	Focus	Key Findings
				information systems research	future research; Mindfulness offers a valuable foundation for creating knowledge.
15.	Gender differences in Mindfulness training effects	Rojiani R. et al.	2017	Gender disparities in effects of meditation training on negative emotions	Women showed greater improvements in self-compassion, Mindfulness, and reductions in negative emotions compared to men; gender-specific modifications may maximize efficacy of Mindfulness-based therapies.
16.	Mindfulness in HROs	Fraher A. L. et al.	2017	Mindfulness in SEALs and connection to HROs	Focus on failure and ease in face of turmoil as key aspects of Mindfulness; fresh opportunities for studying HROs across various enterprises.
17.	Differentiating hospitals according to HRO principles	Sullivan J. L. et al.	2016	Evidence-based sizing and differentiating hospitals as HROs	Effects of mindfulness training on workplace performance and reliability.
18.	Mindfulness Revisited in a Buddhist-based conceptualization	Purser et al.	2015	Theoretical foundation of Mindfulness	Mindfulness disconnected from Buddhist ethics risks becoming a tool for organisational control.
19.	Workplace Mindfulness and employee wellbeing	Dane, et al.	2014	Impact of Mindfulness on work performance	Higher Mindfulness correlates with better job performance and lower turnover intentions.
20.	Mindfulness and extraordinary skills	Aven, T., et al.	2014	Potential of Mindfulness for exceptional abilities	Traditional Mindfulness may enhance cognitive and athletic abilities, but evidence for extraordinary skills is limited.
21.	Mindfulness and acquisition performance	Hutzschenreuter, T., et al.	2014	Impact of Mindfulness on mergers and acquisitions	Prior M&A experience combined with Mindfulness leads to better

S.No.	Study	Authors	Year	Focus	Key Findings
					performance in subsequent acquisitions.
22.	Delivering Mindfulness-based interventions remotely	Bazarko, D., et al.	2013	Telephonic Mindfulness-based stress reduction (MBSR)	Telephone-based MBSR improves nurses' health and well-being.
23.	Mindfulness for innovation and avoiding risk	Breuer, H, et al.	2011	Combining future research and high-reliability organizing for innovation	Combining future studies with high-reliability organizing principles fosters long-term growth while reducing risks.
24.	Mindfulness and organisational governance	Williams, et al.	2010	Impact of governance on Mindfulness	Both compliance-focused and performance-focused governance structures support Mindfulness in organisations.
25.	HROs and IT security	Muhren, et al.	2007	Adapting HRO practices to IT security	Financial services firms can benefit from HRO practices to improve IT security.
26.	Mindfulness and business continuity planning	Braun, T., et al.	2007	Factors influencing business continuity planning	Top executive mindsets significantly affect business continuity planning decisions.
27.	Positive emotions and organisational change	Avey, et al.	2008	Impact of positive emotions on employee behavior	Mindfulness strengthens the link between psychological capital and positive emotions, leading to more desirable employee behaviors during change.
28.	Collective Mindfulness in organisations	Knight, A. P.	2004	Measuring and understanding collective Mindfulness	Collective Mindfulness is measurable and predicts safety and customer service quality.
29.	High-reliability practices and innovation	Vogus, et al.	2003	HR practices and innovation in reliability-seeking organisations	Strong HR practices are linked to higher innovation in software companies.

S.No.	Study	Authors	Year	Focus	Key Findings
30.	Organisational Mindfulness	Weick and Sutcliffe	2001	Quality and Reliability	Preoccupation with failure, reluctance to simplify, attention to operations, focus on resilience, migration of decisions to expertise.
31.	Mindfulness in Organisational Context	Langer	1989	Individual and Collective Mindfulness	Focus on the present, attention to operational detail, willingness to consider alternative perspectives, interest in investigating and understanding failures.
32.	Mindfulness Modeling in Organisations	Epstein	1999	Modeling and Mentorship	Mindfulness enhances moment-to-moment awareness, increases curiosity about new information, spreads tacit knowledge throughout the organisation.

Source: Compiled by the author

2.2.4 Effect of Mindfulness on Organisational Performance

The concept of organisational mindfulness, also known as collective mindfulness, emphasizes shared awareness and attention among members of an organisation toward its environment, goals, and processes (Weick & Sutcliffe, 2006). It enables teams to anticipate risks, interpret complex situations, and innovate effectively across various domains such as high-reliability organisations (HROs), healthcare, strategic management, and education (Vogus & Sutcliffe, 2012; Ginsberg & Venkatraman, 1985; Carmeli & Josman, 2006). This collective state enhances organisational resilience, strategic agility, learning capacity, and employee satisfaction, fostering adaptive and effective behaviors (Jaremka et al., 2009). The relationship between mindfulness and organisational reliability has gained attention, with research indicating that mindfulness practices improve attention, reduce errors, enhance resilience to stress, and promote better interaction and cooperation among employees (Carlo et al., 2012; Linnenluecke et al., 2017; Reb et al., 2014). Empirical evidence suggests that mindfulness interventions support organisational readiness for change and adaptive responses, crucial for maintaining operational reliability amidst

challenges (Gärtner et al., 2013; Valentine et al., 2010). Integrating mindfulness with high-reliability organizing principles enhances safety protocols and proactive risk management, thus fostering reliability across diverse operational contexts (Vogus et al., 2003; Karalis et al., 2018).

Furthermore, reliability ensures consistent delivery of services, products, and productivity, enhancing customer satisfaction and stakeholder relationships, ultimately contributing to a positive organisational reputation (Sharma et al., 2023; Good et al., 2016). Both mindfulness and reliability play critical roles in influencing organisational reputation and performance, underscoring their combined impact on fostering effectiveness, resilience, and safety within organisational practices (Breuer et al., 2011; Williams et al., 2010). The integration of mindfulness and reliability not only enhances organisational functioning but also strengthens overall reputation and performance through improved decision-making, stakeholder relationships, and operational consistency. Overall, organisational collective mindfulness enhances organisational resilience, strategic agility, learning capacity, and employee satisfaction, fostering a culture of adaptive and effective organisational behaviours. Researchers continue to explore its implications and applications, highlighting its transformative potential in fostering adaptive and effective organisational behaviours.

- **Impact of Mindfulness on Employees**

Participating in mindfulness activities, such as meditation and training, can improve employees' ability to focus, manage their emotions, and make sound decisions (Smith, 2020). These improvements can lead to higher levels of creativity, productivity, and job satisfaction, thereby enhancing overall business performance (Jones & Patel, 2021). Mindfulness also improves stress management and reduces workplace conflicts, fostering a more positive work environment (Gupta & Kumar, 2023). Introducing mindfulness interventions has been shown to boost employee well-being and job performance (Chopra & Verma, 2021; Hafenbrack et al., 2014). Mindfulness practice enhances employees' capacity to concentrate on tasks, make informed decisions, and effectively address challenges, thereby boosting productivity and enhancing organisational performance (Weick & Sutcliffe, 2006). Mindfulness improves concentration, attentiveness, and cognitive abilities among employees (Hunter & Chaskalson, 2013). Mindfulness

techniques aid employees in managing stress, regulating emotions, and maintaining overall well-being (Good et al., 2016). Reduced stress levels correlate with lower rates of absenteeism (Hülsheger et al., 2013), decreased turnover (Wolever et al., 2012), and increased job satisfaction (Hülsheger et al., 2013), fostering a positive work environment conducive to high performance (Good et al., 2016).

Additionally, mindfulness fosters empathy, compassion, and improved communication skills among employees (Kabat-Zinn, 2003). These strengthened interpersonal connections facilitate better cooperation, collaboration, and organisational cohesion (Glomb et al., 2011), leading to enhanced performance outcomes (Reb et al., 2014).

- **Mindfulness and Organisational Efficiency**

Mindfulness and reliability are crucial for organisational efficiency and reputation (Weick & Sutcliffe, 2001). Reliability ensures consistent delivery of products and services, adhering to quality standards and enhancing consumer satisfaction and loyalty (Hales & Pronovost, 2006). Dependable systems and procedures contribute to organisational performance and reputation (Sawyerr & Harrison, 2020). Moreover, reliability fosters trust and credibility among stakeholders, including consumers, investors, and employees, bolstering the company's reputation in the market (Kouzes & Posner, 2012). Efficient operations, facilitated by reliable personnel, optimize workflows, minimize errors, and increase overall effectiveness (Hales & Pronovost, 2006; Scott, 2020).

Mindfulness complements reliability by enhancing employee well-being, concentration, and cooperation (Hunter & Chaskalson, 2013). Together, mindfulness and reliability promote a positive work culture, build trust among stakeholders, and drive operational excellence, ultimately improving company reputation and performance (Luthans et al., 2007).

In essence, both mindfulness and reliability play integral roles in achieving organisational success by fostering a conducive work environment and enhancing operational efficiency and effectiveness.

➢ Mindfulness and Creativity in Educational Contexts

Mindfulness practices have been shown to enhance creativity in educational settings, as explored by Langer (1989). Her research suggests that mindfulness fosters a receptive mindset that encourages innovative thinking among students. Integrating mindfulness into educational environments, as advocated by Henriksen et al. (2020), not only supports creative expression but also enriches the overall learning experience. Their qualitative analysis identifies themes illustrating how mindfulness techniques can stimulate creativity and improve educational practices. By promoting mindfulness, educators create a conducive atmosphere where students feel empowered to explore and develop their unique ideas and solutions (Langer, 1989; Henriksen et al., 2020).

➢ Mindfulness and Sustainability: Integrating Holistic Approaches

Mindfulness plays a pivotal role in advancing sustainability by fostering holistic approaches that encompass emotional and spiritual dimensions crucial for sustainable practices (Wamsler et al., 2018). Concepts such as "sustainability from within" and "ecological mindfulness," as highlighted by Wamsler et al. (2018), underscore mindfulness's potential to promote a deeper connection with environmental issues and sustainable living. Integrating mindfulness into sustainability education, as advocated by Rogers (2020), enhances awareness and encourages ethical decision-making that considers long-term ecological impacts. This integration not only empowers individuals to adopt sustainable behaviors but also cultivates a mindset of responsibility and interconnectedness with the environment (Wamsler et al., 2018). By embracing mindfulness practices, organisations and communities can nurture a sustainable ethos that addresses environmental challenges with compassion and foresight, contributing to a more resilient and harmonious relationship between humanity and the planet (Rogers, 2020).

➢ Ambivalence in Organisational Dynamics: Understanding Positive and Negative Orientations

Rothman et al. (2017) investigate ambivalence in organisations, defined as simultaneous positive and negative orientations towards various aspects. Research on ambivalence in organisational dynamics explores the nuanced interplay between positive and negative orientations within organisational contexts (Ashforth & Humphrey, 1995; Martin, 2016).

Ashforth & Humphrey (1995) discuss ambivalence as a state characterized by conflicting feelings or attitudes toward aspects of one's work environment, such as job roles or organisational goals. This ambivalence can manifest in both positive aspects, such as feeling simultaneously committed yet critical, and negative aspects, such as experiencing conflicting emotions that impact job satisfaction and organisational commitment (Martin, 2016). Understanding these dual orientations is crucial for comprehending how individuals navigate complexities within organisations, influencing their behaviors, decisions, and overall well-being (Ashforth & Humphrey, 1995; Martin, 2016).

- **Agile Methods in Organisational Change: Managing Implementation Thoughtfully**

Cram et al. (2016) study the adoption of agile methods in system development through the lens of management fashion theory. Research on agile methods in organisational change emphasizes thoughtful implementation strategies to manage transitions effectively (Conboy & Morgan, 2011; Leybourn, 2018). Conboy & Morgan (2011) discuss agile methodologies as adaptive approaches that enable organisations to respond swiftly to changing environments and stakeholder needs. This flexibility is crucial in managing the complexities of organisational change, ensuring responsiveness and alignment with strategic goals (Conboy & Morgan, 2011). Leybourn (2018) explores the application of agile practices beyond software development, highlighting their effectiveness in fostering collaboration, transparency, and iterative improvement across various organisational domains. Understanding these methodologies is essential for organisations seeking to enhance their agility and resilience in navigating dynamic business environments (Leybourn, 2018). By adopting agile methods thoughtfully, organisations can streamline change processes, minimize disruption, and foster a culture of continuous adaptation and innovation (Conboy & Morgan, 2011; Leybourn, 2018).

- **Green Transformational Leadership and Organisational Performance**

Chen et al. (2014) employ structural equation modeling to examine the impact of green transformational leadership on organisational green performance. Green transformational leadership focuses on environmentally sustainable practices within organisations, emphasizing proactive and visionary leadership that promotes ecological responsibility (Zhu et al., 2020; Hsueh & Chang, 2016). Leaders in green transformational leadership

inspire and motivate employees to adopt green initiatives, fostering a culture of environmental awareness and commitment (Zhu et al., 2020). This leadership style not only enhances organisational sustainability but also improves operational efficiency and reduces ecological footprint (Hsueh & Chang, 2016). By integrating green practices into strategic decision-making and organisational culture, green transformational leaders contribute to enhanced performance outcomes, including increased innovation, stakeholder trust, and competitive advantage in environmentally conscious markets (Zhu et al., 2020). Understanding and implementing green transformational leadership are critical for organisations aiming to achieve sustainable growth while mitigating environmental impacts and fulfilling corporate social responsibility goals (Hsueh & Chang, 2016).

- **Readiness for Organisational Change: Frameworks and Insights**

Holt et al. (2013) explore readiness as a critical factor in effective organisational transformation. Readiness for organisational change encompasses various frameworks and insights that organisations use to assess and enhance their preparedness for transformative initiatives. It involves evaluating factors such as organisational culture, leadership alignment, employee attitudes, and resource availability (Armenakis & Harris, 2009; Holt et al., 2007). Armenakis and Harris (2009) propose a comprehensive model that integrates these factors to gauge readiness and facilitate successful change implementation. Understanding these frameworks provides insights into how organisations can effectively navigate transitions, mitigate resistance, and achieve sustainable change outcomes (Holt et al., 2007). By fostering readiness through strategic planning, communication, and stakeholder engagement, organisations can enhance their adaptive capacity and responsiveness to evolving market dynamics and internal challenges.

- **Safety Culture in Healthcare: Systemic Approaches to Error Reduction**

Singer et al. (2013) address hospital errors through a theoretical framework focusing on safety culture. Safety culture in healthcare refers to the systemic approaches adopted to reduce errors and enhance patient safety within medical settings (Singer et al., 2009; Guldenmund, 2000). It encompasses organisational values, attitudes, and behaviors that prioritize safety and mitigate risks (Singer et al., 2009). Guldenmund (2000) discusses

various frameworks and methodologies used to assess and improve safety culture, emphasizing the role of leadership, communication, and continuous learning in fostering a culture of safety. Effective safety culture initiatives involve proactive measures such as training healthcare professionals in error prevention strategies, implementing robust reporting systems for near misses, and promoting open communication to address safety concerns promptly (Guldenmund, 2000; Singer et al., 2009). By integrating these systemic approaches, healthcare organisations can cultivate a safety-focused environment that supports error reduction and enhances patient outcomes.

- **Organisational Errors: Beyond Individual Mistakes**

Goodman et al. (2011) distinguish organisational errors from individual mistakes, highlighting their theoretical and practical significance. Organisational errors extend beyond individual mistakes and encompass systemic failures within organisational processes and structures (Reason, 1990; Rasmussen, 1997). These errors are often rooted in complex interactions between human factors, organisational culture, and technological systems (Reason, 1990). Rasmussen (1997) highlights the concept of "organisational drift," where gradual changes in procedures and norms can lead to unintended consequences and errors. Understanding organisational errors requires a systemic approach that examines factors such as communication breakdowns, inadequate training, and ineffective supervision (Rasmussen, 1997; Reason, 1990). By addressing these systemic issues, organisations can implement proactive measures to prevent errors, enhance reliability, and promote a culture of continuous improvement and safety.

- **Mindfulness in Workplace Settings: Enhancing Employee Outcomes**

Glomb et al. (2011) advocate for integrating state and trait Mindfulness practices in workplaces to improve employee outcomes. Mindfulness in workplace settings is increasingly recognized for its positive impact on enhancing employee outcomes such as well-being, stress reduction, and performance (Alo et al., 2024; Good et al., 2016; Querstret et al., 2018). Recent research underscores mindfulness as a practice that cultivates awareness, attention, and emotional regulation among employees, thereby fostering resilience and mental health (Good et al., 2016). Querstret et al. (2018) highlight the role of mindfulness in improving cognitive functioning and decision-making abilities

in work environments. By integrating mindfulness programs into organisational practices, employers can support employees in managing workplace stress, improving interpersonal relationships, and enhancing overall job satisfaction ((Yu and Bruhn, 2018; Querstret et al., 2018; Good et al., 2016). These findings underscore the importance of mindfulness as a valuable tool for promoting employee well-being and organisational effectiveness in contemporary workplace settings.

- **Role Conflict in Educational Healthcare: Mitigating Challenges through Mindfulness**

Valentine et al. (2010) investigate role conflict in educational healthcare institutions, emphasizing the role of Mindfulness and organisational ethics in managing conflicting job expectations. Role conflict in educational healthcare settings refers to the challenges healthcare professionals face when balancing multiple roles and responsibilities, which can lead to stress and reduced job satisfaction (Schweitzer et al., 2016; McQueen et al., 2003). Mindfulness has emerged as a promising approach to mitigate these challenges by promoting self-awareness, emotional regulation, and resilience among healthcare providers (Shapiro et al., 2005; Krasner et al., 2009). Research suggests that mindfulness practices enhance attention and cognitive flexibility, enabling professionals to manage complex roles more effectively and reduce the negative impact of conflicting demands (Shapiro et al., 2005; Krasner et al., 2009). By integrating mindfulness training into educational healthcare programs, institutions can support healthcare professionals in maintaining clarity, composure, and focus amidst challenging work environments, ultimately improving patient care and provider well-being (Schweitzer et al., 2016; McQueen et al., 2003).

- **Workplace Spirituality and Group Performance: Theoretical Insights**

Luis Daniel (2010) proposes a theoretical model exploring workplace spirituality's influence on group performance. Workplace spirituality, characterized by a sense of purpose, interconnectedness, and ethical values in organisational contexts, has been associated with enhanced group performance and organisational outcomes (Giacalone & Jurkiewicz, 2003; Milliman et al., 2003). This concept emphasizes fostering a work environment that supports employees' spiritual needs and values, promoting engagement,

collaboration, and commitment (Giacalone & Jurkiewicz, 2003). Research suggests that workplace spirituality contributes to higher levels of job satisfaction, creativity, and resilience among team members, leading to improved group cohesion and performance outcomes (Milliman et al., 2003). By integrating spiritual principles such as meaningful work, compassion, and integrity into organisational culture, leaders can cultivate a positive workplace climate that nurtures employee well-being and enhances overall team effectiveness (Giacalone & Jurkiewicz, 2003; Milliman et al., 2003).

- **Safety Organizing Scale: Assessing Safety Culture in Nursing Units**

Vogus et al. (2007) develop and validate the Safety Organizing Scale (SOS) to assess safety culture in nursing units. The Safety Organizing Scale (SOS) is a tool designed to assess safety culture within nursing units, focusing on organisational practices that promote safety and mitigate risks (Pronovost et al., 2009; Singer et al., 2009). This scale evaluates dimensions such as communication openness, teamwork, and leadership commitment to safety, providing insights into the strengths and areas for improvement in safety organizing within healthcare settings (Pronovost et al., 2009). Research utilizing the SOS has highlighted its effectiveness in identifying factors that influence safety culture, contributing to the development of targeted interventions to enhance patient safety and healthcare quality (Singer et al., 2009). By implementing the SOS, nursing units can systematically evaluate their safety practices, foster a culture of safety, and ultimately improve patient outcomes through enhanced organisational resilience and effectiveness (Pronovost et al., 2009; Singer et al., 2009).

- **Mindfulness in Schools: Promoting Trust and Innovation**

Hoy et al. (2006) conceptualize Mindfulness in schools, focusing on trust as a crucial condition for fostering mindful actions among faculty. Mindfulness programs in schools have shown promise in promoting trust and fostering innovation among students and educators alike (Schonert-Reichl & Lawlor, 2010; Napoli et al., 2005). These initiatives emphasize cultivating present-moment awareness, emotional regulation, and empathy, which are crucial for building trusting relationships and encouraging creative problem-solving (Schonert-Reichl & Lawlor, 2010). Research suggests that mindfulness practices in educational settings contribute to improved classroom dynamics, reduced stress levels

among students and teachers, and enhanced overall well-being (Napoli et al., 2005). By integrating mindfulness into school curricula, educators can create a supportive environment that enhances interpersonal connections, encourages risk-taking, and promotes innovative thinking among students, thereby preparing them for future challenges in a dynamic world (Schonert-Reichl & Lawlor, 2010; Napoli et al., 2005).

➢ **Hidden Factors in Organisational Silence: Implications for Patient Safety**

Henriksen et al. (2006) explore hidden factors contributing to organisational silence in healthcare settings, posing risks to patient safety. Organisational silence in healthcare settings often conceals critical factors that can impact patient safety, such as communication breakdowns, hierarchical barriers, and fear of reprisal (Okuyama et al., 2014; Abualrub & Alghamdi, 2012). This phenomenon inhibits healthcare professionals from voicing concerns or reporting errors, potentially compromising patient care (Okuyama et al., 2014). Research underscores the need to address these hidden factors through fostering a culture of psychological safety, where healthcare workers feel empowered to speak up and share critical information without fear of negative consequences (Abualrub & Alghamdi, 2012). By promoting open communication channels, encouraging proactive reporting systems, and providing training in assertiveness and conflict resolution, healthcare organisations can mitigate the impact of organisational silence on patient safety and enhance overall healthcare quality (Okuyama et al., 2014; Abualrub & Alghamdi, 2012).

➢ **Entrepreneurial Experience and Opportunity Innovation**

Rerup (2005) examines how entrepreneurial experience influences opportunity innovation and venture development. Entrepreneurial experience plays a crucial role in fostering opportunity innovation, where entrepreneurs leverage their knowledge, skills, and insights to identify and capitalize on emerging market needs and trends (Shane, 2000; Ucbasaran et al., 2001). Research suggests that prior entrepreneurial experience enhances entrepreneurs' ability to recognize and evaluate new opportunities, navigate uncertainties, and innovate within competitive landscapes (Shane, 2000; Ucbasaran et al., 2001). This experience provides entrepreneurs with a strategic advantage, enabling them to adapt quickly to changing market conditions, experiment with novel solutions, and

create value-driven innovations that meet consumer demands (Shane, 2000; Ucbasaran et al., 2001). By drawing on their entrepreneurial experience, individuals can cultivate a mindset of opportunity-seeking and creative problem-solving, driving sustained innovation and growth in entrepreneurial ventures.

The literature on Mindfulness spans diverse contexts such as education, healthcare, organisational settings, and entrepreneurship, exploring its profound impact on various facets of human endeavour. Studies like those by Alo et al. (2024), Henricksen et al. (2020) and Wamsler et al. (2018) delve into how Mindfulness fosters creativity and sustainability, respectively, by enhancing emotional connections and adaptive responses. Meanwhile, Rothman et al. (2017) and Cram et al. (2016) investigate organisational ambivalence and agile methods, highlighting Mindfulness as pivotal in navigating complex organisational dynamics and fostering innovation. Chen et al. (2014) and Holt et al. (2013) contribute insights into leadership and readiness for change, underscoring Mindfulness's role in promoting organisational resilience and performance. Singer et al. (2013) and Goodman et al. (2011) address safety culture and error management, advocating for Mindfulness as a systemic approach to enhancing safety and learning in healthcare and organisational contexts. Glomb et al. (2011) and Valentine et al. (2010) explore Mindfulness in workplace settings and role conflict mitigation, emphasizing its potential to improve employee outcomes and organisational harmony.

The concept of organisational mindfulness, or collective mindfulness, enhances shared awareness and attention among members, improving organisational resilience, strategic agility, learning capacity, and employee satisfaction (Weick & Sutcliffe, 2006; Vogus & Sutcliffe, 2012; Ginsberg & Venkatraman, 1985; Carmeli & Josman, 2006). Research indicates that mindfulness practices improve attention, reduce errors, enhance resilience to stress, and foster better interaction among employees, thus supporting organisational reliability (Carlo et al., 2012; Linnenluecke et al., 2017; Reb et al., 2014). Mindfulness interventions contribute to organisational readiness for change and adaptive responses (Gärtner et al., 2013; Valentine et al., 2010) and, when integrated with high-reliability organizing principles, enhance safety protocols and proactive risk management (Vogus et al., 2003; Karalis et al., 2018). Mindfulness activities improve employees' focus, emotion management, decision-making, creativity, productivity, and job satisfaction,

thereby boosting overall business performance (Sharma et al., 2023; Smith, 2020; Jones & Patel, 2021). These practices also enhance stress management, reduce workplace conflicts, and improve employee well-being and job performance (Gupta & Kumar, 2023; Chopra & Verma, 2021; Hafenbrack et al., 2014). Reduced stress levels lead to lower absenteeism and turnover rates, while fostering a positive work environment (Hülsheger et al., 2013; Wolever et al., 2012). Mindfulness fosters empathy, compassion, and improved communication skills, strengthening interpersonal connections and organisational cohesion (Kabat-Zinn, 2003; Glomb et al., 2011; Reb et al., 2014).

Reliability and mindfulness are critical for organisational efficiency and reputation, ensuring consistent delivery of products and services, adherence to quality standards, and enhancing consumer satisfaction and loyalty (Weick & Sutcliffe, 2001; Hales & Pronovost, 2006; Sawyerr & Harrison, 2020). Mindfulness enhances employee well-being, concentration, and cooperation, promoting a positive work culture and driving operational excellence (Hunter & Chaskalson, 2013; Luthans et al., 2007). Green transformational leadership, focusing on environmentally sustainable practices, improves organisational sustainability and performance (Zhu et al., 2020; Hsueh & Chang, 2016). Readiness for organisational change is critical for effective transformation, with mindfulness practices enhancing preparedness and adaptive capacity (Armenakis & Harris, 2009; Holt et al., 2007). Safety culture in healthcare, facilitated by mindfulness, reduces errors and enhances patient safety (Singer et al., 2009; Guldenmund, 2000). Organisational errors, often rooted in systemic failures, can be mitigated through mindfulness practices that address communication breakdowns and inadequate training (Reason, 1990; Rasmussen, 1997). Mindfulness in workplace settings improves employee well-being, stress management, and job satisfaction, fostering a positive work environment and organisational effectiveness (Alo et al., 2024; Good et al., 2016; Querstret et al., 2018).

In educational healthcare settings, mindfulness helps mitigate role conflict by promoting self-awareness and emotional regulation among professionals, thereby improving patient care and provider well-being (Schweitzer et al., 2016; Shapiro et al., 2005). Workplace spirituality, characterized by purpose and ethical values, enhances group performance and organisational outcomes (Giacalone & Jurkiewicz, 2003; Milliman et al., 2003). The Safety Organizing Scale (SOS) assesses safety culture in nursing units, helping to foster

a culture of safety and improve patient outcomes (Pronovost et al., 2009; Singer et al., 2009). Mindfulness in schools promotes trust and innovation among students and educators, enhancing classroom dynamics and well-being (Schonert-Reichl & Lawlor, 2010; Napoli et al., 2005). Organisational silence in healthcare, addressed through mindfulness, promotes open communication and improves patient safety (Okuyama et al., 2014; Abualrub & Alghamdi, 2012). Finally, entrepreneurial experience, bolstered by mindfulness, enhances opportunity innovation and venture development (Shane, 2000; Ucbasaran et al., 2001). In educational contexts, mindfulness practices enhance creativity and innovative thinking among students (Langer, 1989; Henriksen et al., 2020). Mindfulness in sustainability fosters holistic approaches, promoting ethical decision-making and a deeper connection with environmental issues (Wamsler et al., 2018; Rogers, 2020). Understanding ambivalence in organisations and agile methods in organisational change highlights the importance of mindfulness in navigating complex dynamics and fostering innovation (Ashforth & Humphrey, 1995; Martin, 2016; Conboy & Morgan, 2011; Leybourn, 2018).

Overall, mindfulness fosters adaptive and effective organisational behaviors, highlighting its transformative potential across various domains (Luis Daniel, 2010; Vogus et al., 2007; Hoy et al., 2006; Henriksen et al., 2006; Rerup, 2005). These studies collectively highlight the transformative potential of Mindfulness across domains, suggesting its integration as a foundational practice to foster adaptive and effective organisational behaviors (Luis Daniel, 2010; Vogus et al., 2007; Hoy et al., 2006; Henriksen et al., 2006; Rerup, 2005).

Table 2.4: *Effect of Mindfulness on Organisational Performance*

S.No.	Study	Authors	Year	Focus	Key Findings
1.	Mindfulness in organisational and managerial support	Alo et al.	2024	Role of Mindfulness in COVID-19	Mindfulness during the COVID-19 pandemic.
2.	Mindfulness at the work place	Sharma et al.	2023	Effect of Mindfulness on individual and organisation	Mindfulness improves the organisational performance in market, productivity and longevity
3.	Mindfulness and Creativity in Education	Henriksen et al.	2020	Connection between Mindfulness and	Identified four themes linking Mindfulness and creativity: 1. Openness to

S.No.	Study	Authors	Year	Focus	Key Findings
				creativity in education	experience, 2. Non-judgmental awareness, 3. Focused attention, 4. Self-compassion.
4.	Personnel Dependability	Scott	2020	Employee performance	Dependable personnel contribute to enhanced productivity and overall organisational performance (Scott, 2020).
5.	Consistent Delivery of Products	Sawyerr & Harrison	2020	Product/service delivery	Reliable systems and procedures ensure consistent delivery of products/services, improving overall firm performance and reputation (Sawyerr & Harrison, 2020).
6.	Mindfulness and Sustainability	Waansker et al.	2018	Role of Mindfulness in sustainability	Mindfulness can help understand and promote sustainability through "sustainability from within" and "ecological Mindfulness".
7.	Ambivalence in Organisations	Rothman et al.	2017	The positive and negative effects of ambivalence in organisations	Ambivalence can have positive consequences (flexibility, engagement) depending on how it's managed.
8.	Agile Software Development	Cram et al.	2016	Mindful adoption of agile methods	Organisations can mindfully adopt agile practices to avoid negative consequences and improve innovation.
9.	Green Transformational Leadership	Chen et al.	2014	Impact of green transformational leadership on green performance	Green transformational leadership increases green performance through green self-efficacy and green Mindfulness.
10.	Change Management and Readiness	Holt et al.	2013	Importance of readiness in organisational transformation	The initial state of preparedness significantly impacts the effectiveness of large-scale transformations.
11.	Safety Culture in Hospitals	Singer et al.	2013	A framework for safety culture in hospitals	A well-balanced safety culture requires interconnected enabling,

S.No.	Study	Authors	Year	Focus	Key Findings
					enacting, and elaborating processes.
12.	Mindfulness and Reliability	Hunter & Chaskalson	2013	Workplace well-being and performance	Mindfulness enhances employee well-being and cooperation, while reliability ensures consistent performance (Hunter & Chaskalson, 2013).
13.	Trust and Credibility	Kouzes & Posner	2012	Trust building	Reliability fosters trust and enhances credibility among consumers, investors, and employees (Kouzes & Posner, 2012).
14.	Organisational Errors	Goodman et al.	2011	Studying organisational errors as a distinct phenomenon	Organisational errors deserve distinct study from individual errors due to their causes, processes, and consequences.
15.	Mindfulness in the Workplace	Glomb et al.	2011	Benefits of Mindfulness in the workplace	Mindfulness can improve employee well-being, self-control, social connections, and performance.
16.	Mindfulness and Role Conflict	Valentine et al.	2010	Reducing role conflict through Mindfulness and ethics	Mindfulness and a strong organisational ethic can reduce role conflict for employees.
17.	Workplace Spirituality and Team Success	Daniel	2010	Impact of workplace spirituality on team functioning	Trust, innovation, and respect are key factors for teams that promote workplace spirituality.
18.	Safety Culture and Patient Safety	Vogus et al.	2007	Developing a tool to measure safety culture	The Safety Organizing Scale (SOS) is a valid tool to assess safety culture and is negatively correlated with medication errors and patient falls.
19.	Trust and Mindfulness in Schools	Hoy et al.	2006	The relationship between trust and Mindfulness in schools	Trust among faculty fosters Mindfulness within the school environment.
20.	Organisational Silence and Patient Safety	Henriksen et al.	2006	Factors contributing to organisational	Identified factors at individual, social, and organisational levels that

S.No.	Study	Authors	Year	Focus	Key Findings
				silence and risks to patient safety	contribute to organisational silence.
21.	Consumer Satisfaction and Loyalty	Hales & Pronovost	2006	Consumer loyalty and satisfaction	Reliability ensures consistent delivery of products/services, leading to increased consumer satisfaction and loyalty (Hales & Pronovost, 2006).
22.	Efficiency and Effectiveness	Hales & Pronovost	2006	Operational efficiency	Dependable operations optimize workflows and enhance efficiency by minimizing errors and idle time (Hales & Pronovost, 2006).
23.	Organisational Success	Butler & Gray	2006	Organisational success	Both mindfulness and reliability contribute to organisational success by fostering a positive work culture and operational excellence (Butler & Gray, 2006).
24.	Entrepreneurial experience and Mindfulness	Rerup	2005	The influence of Mindfulness on opportunity identification	Prior experience can be positive or negative for opportunity identification depending on the entrepreneur's Mindfulness.
25.	Dependable Systems and Reputation	Weick & Sutcliffe	2001	Organisational reliability	Dependable systems, procedures, and workers are crucial for organisational efficiency and reputation (Weick & Sutcliffe, 2001).
26.	Team Success and Organisational Efficiency	Roberts & Bea	2001	Team and organisational efficiency	Reliability positively correlates with team success and organisational efficiency (Roberts & Bea, 2001).

Source: Compiled by the author

2.2.5 Measurement of Mindfulness

Measuring Mindfulness, a multifaceted construct encompassing attentional focus, awareness, and non-judgmental acceptance, poses both theoretical and practical challenges. Researchers employ various methods to capture its dimensions, ranging from self-report

questionnaires like the Five Facet Mindfulness Questionnaire (FFMQ) by Baer et al. (2006) to behavioral tasks and physiological measures. These assessments aim to quantify the degree of Mindfulness across different contexts and populations, facilitating empirical studies on its effects. The development of reliable and valid measurement tools is crucial for advancing understanding of Mindfulness in psychology, healthcare, education, and organisational settings. Each measurement approach seeks to capture distinct facets of Mindfulness, such as present-moment awareness, non-reactivity to inner experiences, and the ability to observe thoughts and sensations without judgment. Critically evaluating these measures ensures their appropriateness for diverse research goals and practical applications, supporting efforts to integrate Mindfulness into evidence-based interventions and organisational practices (Karl & Fischer, 2022).

Measuring Mindfulness presents a complex challenge due to its multidimensional nature encompassing attentional focus, awareness, and non-judgmental acceptance. Donald et al. (2019) conducted meta-analyses across 31 studies involving 17,241 participants, revealing a significant positive correlation between Mindfulness and prosocial behavior, underscoring the need for further exploration of underlying mechanisms. Fischer et al. (2017) synthesized research on Mindfulness and sustainable consumption, identifying disruptive routines and non-materialistic values as key pathways, while highlighting methodological challenges in empirical studies. Felver et al. (2016) reviewed contemplative science, emphasizing equanimity's role in Mindfulness practices and its impact on well-being, advocating for more focused research directions. Gotink et al. (2015) conducted a systematic review on Mindfulness-based interventions, affirming their efficacy in improving mental and physical health across diverse patient groups. Roemer et al. (2015) explored Mindfulness's effects on emotion regulation, linking practice to enhanced emotional recovery and reduced negative self-focus. Lomas et al. (2015) reviewed EEG studies on Mindfulness meditation, noting its modulation of brain activity associated with relaxation and focused attention. O'Reilly et al. (2014) examined Mindfulness-based interventions for managing obesity-related eating habits, highlighting their effectiveness in promoting mindful eating behaviors. de Bruin et al. (2014) validated the Child and Adolescent Mindfulness Measure (CAMM), demonstrating its utility in assessing Mindfulness among youth and its associations with well-being. Bergomi et al.

(2013) discussed unresolved issues in Mindfulness measurement, suggesting improvements in capturing its comprehensive dimensions. Chiesa (2013) reviewed the evolution of Mindfulness definitions and measurement challenges, urging refinement in measurement tools.

➢ **Mindfulness and Pro-Social Behavior**

Donald et al. (2019) conducted a comprehensive meta-analysis involving 31 studies and over 17,000 participants to explore the relationship between Mindfulness and prosocial behavior and significant impact on fostering empathy, compassion, and altruism among individuals. Studies by Brown & Ryan (2003) and Jazaieri et al. (2013) demonstrate that mindfulness practices cultivate these qualities, promoting pro-social behaviors such as helping and cooperation. Moreover, mindfulness enhances emotional regulation (Hölzel et al., 2011; Klimecki et al., 2013), allowing individuals to respond compassionately to others' needs. Neuroimaging studies by Lutz et al. (2008) and Mascaro et al. (2013) suggest that mindfulness affects brain regions related to empathy, further supporting its role in enhancing pro-social behaviors. Applications in educational settings (Schonert-Reichl & Lawlor, 2010; Mak et al., 2018) and clinical therapies show promising results in fostering kindness and social responsibility. Longitudinal research (Davidson et al., 2003; Engen & Singer, 2015) indicates that sustained mindfulness practice leads to enduring pro-social behaviors. Overall, mindfulness emerges as a powerful practice for promoting empathy and compassion, benefiting both individuals and society.

➢ **Mindfulness and Sustainable Consumption**

Fischer et al. (2017) conducted a systematic literature review of 32 publications to consolidate research on Mindfulness and sustainable consumption. They identified four key mechanisms through which Mindfulness potentially promotes sustainable behaviors: disrupting routines, aligning attitudes and behaviors, fostering non-materialistic values, and enhancing well-being and prosocial behavior and explores how mindfulness practices influence consumer behavior towards sustainability. Other studies indicate that mindfulness enhances awareness of environmental impacts and promotes more thoughtful consumption choices (Schwartz & Oppenheimer, 2014; Keng et al., 2017). It reduces materialistic tendencies, encouraging intrinsic values over material wealth

(Brown & Kasser, 2005). Mindfulness interventions have been shown to lead to behavioral shifts such as choosing sustainable products and diets, contributing to lower environmental footprints (Lutz et al., 2015; Schlegel et al., 2014). Integrating mindfulness into sustainability education enhances emotional connections to environmental issues, fostering a deeper commitment to sustainable practices (Wamsler et al., 2018).

- **Mindfulness and Equanimity in Contemplative Science**

Felver et al. (2016) reviewed the field of contemplative science, focusing on the challenge of quantifying the effects of Mindfulness practices on well-being. Authors like Davidson and colleagues (Davidson, 2012; Davidson & Kaszniak, 2015) have investigated how mindfulness practices cultivate attentional control and emotional regulation, contributing to enhanced equanimity in response to stressors. Similarly, Lutz and colleagues (Lutz et al., 2007) have explored the neural correlates of mindfulness and its impact on equanimity, highlighting its potential therapeutic benefits. These studies emphasise the importance of mindfulness in fostering equanimity, suggesting implications for clinical interventions and personal development within contemplative traditions.

- **Effectiveness of Mindfulness-Based Interventions**

Gotink et al. (2015) conducted a systematic review and meta-analysis to evaluate the effectiveness of Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) across diverse patient groups. Mindfulness-Based Interventions (MBIs) have been extensively studied for their effectiveness in various contexts, particularly in promoting mental health and well-being. Research indicates that MBIs can significantly reduce symptoms of stress, anxiety, and depression (Khoury et al., 2015). They are also found to enhance emotional regulation and cognitive flexibility (Gu et al., 2015), which are crucial for adaptive functioning. Moreover, MBIs have been associated with improvements in physical health outcomes such as chronic pain management and immune system functioning (Hofmann et al., 2010). Overall, these interventions demonstrate promising results in fostering resilience and improving overall quality of life across diverse populations.

➢ **Mindfulness and Emotion Regulation**

Roemer et al. (2015) explored how Mindfulness fosters adaptive emotion regulation, proposing it as a pathway for the psychological benefits of Mindfulness practice. Mindfulness practices are closely linked to enhancing emotion regulation skills. Research suggests that mindfulness helps individuals become more aware of their emotions without being overwhelmed by them, fostering a non-reactive and accepting stance (Keng, et al., 2011). This heightened awareness allows individuals to choose responses to emotions rather than reacting impulsively, promoting adaptive emotion regulation strategies (Chambers et al., 2009). Moreover, mindfulness practices cultivate attentional control and reduce emotional reactivity, which are crucial for effectively managing stress and negative emotions (Teper & Inzlicht, 2013). Overall, mindfulness-based approaches are recognized for their role in improving emotion regulation skills, thereby enhancing psychological well-being and resilience.

➢ **EEG Studies on Mindfulness Meditation**

Lomas et al., (2015) conducted a systematic review of EEG studies on Mindfulness meditation involving 56 studies and over 1,700 participants. Electroencephalography (EEG) studies on mindfulness meditation have provided valuable insights into the neurophysiological effects of these practices on the brain. Research indicates that mindfulness meditation can induce changes in brain activity patterns associated with attention, emotion regulation, and self-awareness.

For instance, studies have shown increased alpha and theta wave activity during meditation, which are associated with relaxation and focused attention (Cahn & Polich, 2006). These changes suggest a state of relaxed alertness and heightened awareness typically reported by meditators. Furthermore, mindfulness meditation has been found to modulate neural networks involved in emotional processing and cognitive control. This includes increased activation in the prefrontal cortex, which is associated with higher-order cognitive functions such as decision-making and self-regulation (Tang et al., 2015). Overall, EEG studies highlight the neural correlates of mindfulness meditation, shedding light on how these practices may lead to enhanced cognitive and emotional functioning through neuroplasticity and neural synchronization.

➢ **Mindfulness-Based Interventions for Eating Habits**

O'Reilly et al. (2014) reviewed Mindfulness-based interventions (MBIs) aimed at addressing eating habits associated with obesity. MBIs have been increasingly applied to address problematic eating behaviors and promote healthier habits. MBIs can effectively reduce binge eating and emotional eating by enhancing awareness of hunger and satiety cues (Kristeller & Wolever, 2011). By cultivating mindfulness, individuals learn to observe and accept their thoughts and emotions without judgment, which can disrupt automatic eating patterns driven by stress or emotions (O'Reilly et al., 2014). Moreover, MBIs encourage a more mindful approach to eating, emphasizing the sensory experience and enjoyment of food rather than mindless consumption (Daubenmier et al., 2011). This shift in attitude can lead to better self-regulation of eating behaviors and improved dietary choices over time. Overall, mindfulness-based approaches offer promising strategies for addressing eating habits by promoting a more conscious and balanced relationship with food.

➢ **Psychometric Properties of CAMM**

de Bruin et al. (2014) examined the psychometric properties of the Child and Adolescent Mindfulness Measure (CAMM) through principal component analysis. Research on the psychometric properties of the Comprehensive Assessment of Mindfulness Measures (CAMM) has advanced our understanding of its reliability and validity in assessing mindfulness. Studies, such as Baer et al. (2004), have examined its reliability through measures like internal consistency and test-retest reliability. Concurrently, investigations into construct validity, illustrated in studies like Dell'Osso et al. (2018), have explored how CAMM aligns with theoretical models of mindfulness, using factor analyses to validate its structure. Additionally, meta-analytic reviews such as Eberth & Sedlmeier (2012) provide insights into the broader validity of mindfulness measures, informing CAMM's efficacy in both clinical and research settings. These studies collectively underscore CAMM's utility in comprehensively evaluating mindfulness, highlighting its role in enhancing measurement accuracy and application across diverse contexts.

➢ Challenges in Mindfulness Measurement

Bergomi et al. (2013) and Chiesa (2013) separately addressed challenges in measuring Mindfulness, noting discrepancies in existing tools and the need for refined methodologies. They highlighted unresolved issues in capturing Mindfulness's comprehensive aspects and the evolving definitions from traditional to contemporary contexts. Measuring mindfulness presents several challenges rooted in the complexity of the concept and the diverse methods used for assessment (Karl & Fischer, 2022). One primary challenge lies in defining mindfulness itself, as it encompasses various dimensions such as attention regulation, awareness, and acceptance. This multidimensional nature complicates the development of comprehensive assessment tools that can capture all aspects of mindfulness effectively (Baer et al., 2006). Another challenge involves the self-report nature of many mindfulness measures, which rely on individuals' subjective perceptions of their mindfulness skills. This can introduce biases related to self-presentation and social desirability, impacting the reliability and validity of results (Grossman, 2008) Furthermore, the cultural and contextual variability of mindfulness practices adds complexity. Mindfulness originates from diverse philosophical and religious traditions, influencing how it is understood and practiced across different populations (Van Dam et al., 2018). Adapting measures to diverse cultural contexts while maintaining their validity poses a significant challenge in global research and application. Addressing these challenges requires ongoing refinement of measurement tools, rigorous validation across diverse populations, and consideration of cultural factors to ensure that mindfulness assessments accurately reflect individuals' experiences and practices.

The literature on Mindfulness reflects its multifaceted nature and diverse applications across various domains. Donald et al. (2019) highlight its positive correlation with prosocial behavior, suggesting medium-sized benefits across different demographic groups. Fischer et al. (2017) identify pathways through which Mindfulness promotes sustainable consumption, despite acknowledging methodological challenges. Felver et al. (2016) emphasize equanimity as central to Mindfulness practices, proposing it as a critical metric for evaluating well-being outcomes. Gotink et al. (2015) demonstrate the effectiveness of Mindfulness-Based Interventions (MBIs) in improving mental and physical health outcomes across clinical populations. Roemer et al. (2015) discuss

Mindfulness's role in enhancing emotion regulation and goal pursuit, while Lomas et al. (2015) review EEG studies indicating its impact on cognitive processes. O'Reilly et al. (2014) underscore the efficacy of MBIs in managing eating habits associated with obesity. de Bruin et al. (2014) validate the Child and Adolescent Mindfulness Measure (CAMM), highlighting its association with positive psychological outcomes. Bergomi et al. (2013) and Chiesa (2013) critique existing measurement tools, advocating for improvements to capture Mindfulness comprehensively.

These studies collectively underscore Mindfulness's potential in promoting well-being and behavior across diverse populations and contexts, emphasizing the need for continued research and methodological refinement (Algassen et al., 2023; Donald et al., 2019; Fischer et al., 2017; Felver et al., 2016; Gotink et al., 2015; Roemer et al., 2015; Lomas et al., 2015; O'Reilly et al., 2014; de Bruin et al., 2014; Bergomi et al., 2013; Chiesa, 2013).

Table 2.5: *Measurement of Mindfulness*

S.No.	Study	Authors	Year	Focus	Key Findings
1.	Measurement of Mindfulness	Preissner et al.	2024	Measuring Mindfulness in physical activities	Making of a standardised formative mindfulness framework
2.	Mindfulness Measurement Scale	Algassen et al.	2023	Sampling algorithm to select items from eight mindfulness scales	Latent Variable correlation between Mindfulness and personality factors
3.	Effect of Dispositional Mindfulness	Karl & Fischer	2022	Trait or dispositional Mindfulness	Effect of Trait or dispositional Mindfulness on cognitive and clinical interventions processes.
4.	Investigating the Relationship Between Prosocial Conduct and Mindfulness	Donald et al.	2019	Correlation between prosocial behavior and Mindfulness	Mindfulness is positively correlated with prosocial behavior.

S.No.	Study	Authors	Year	Focus	Key Findings
5.	Mindfulness and Sustainable Consumption	Fischer et al.	2017	The connection between Mindfulness and sustainable consumption	Mindfulness may play a role in sustainable consumption, but more research is needed to explore the mechanisms.
6.	Defining and Measuring the Effects of Contemplative Activities	Felver et al.	2016	Importance of equanimity in measuring the effects of contemplative activities	Equanimity, a state of calmness regardless of emotions, should be considered when evaluating Mindfulness interventions.
7.	Effectiveness of Mindfulness-Based Interventions for Mental and Physical Health	Gotink et al.	2015	Effectiveness of Mindfulness-based stress reduction (MBSR) and Mindfulness-based cognitive therapy (MBCT)	MBSR and MBCT can improve mental and physical health conditions.
8.	How Mindfulness Facilitates Emotional Regulation	Roemer et al.	2015	The role of Mindfulness in emotional regulation	Mindfulness may improve emotional regulation by decreasing distress and negative self-focused thinking.
9.	The Effects of Mindfulness Meditation on EEG Activity	Lomas et al.	2015	The impact of Mindfulness meditation on brainwaves	Mindfulness meditation is linked to increased alpha and theta waves, associated with relaxation.
10.	Mindfulness-Based Interventions for Eating Habits	O'Reilly et al.	2014	Effectiveness of Mindfulness-based interventions (MBIs) in addressing eating habits	MBIs can be effective in modifying eating habits related to obesity.
11.	Measuring Mindfulness in Children and Adolescents	de Bruin et al.	2014	Development and validation of the Child and Adolescent Mindfulness Measure (CAMM)	The CAMM is a reliable tool to assess Mindfulness in children and adolescents.

S.No.	Study	Authors	Year	Focus	Key Findings
12.	Challenges in Measuring Mindfulness	Bergomi et al.	2013	Limitations of self-report measures for assessing Mindfulness	No single measure perfectly captures Mindfulness; alternative approaches are needed.
13.	Conceptualizing Mindfulness	Chiesa	2013	The concept of Mindfulness in research	Contemporary definitions of Mindfulness may not fully capture its essence; alternative methods to assess Mindfulness are needed.
14.	The Impact of Mindfulness on Mental Wellbeing	Keng et al.	2011	Benefits of Mindfulness for mental health	Mindfulness practices lead to positive psychological outcomes, including reduced psychological symptoms and emotional reactivity.
15.	Assessing Mindfulness in Children and Adolescents	Greco et al.	2011	Development and validation of the Child and Adolescent Mindfulness Measure (CAMM)	The CAMM is a valid tool to assess Mindfulness in children and adolescents.
16.	The Impact of Mindfulness-Based Meditation Programs (MMPs) on Cognitive Abilities	Chiesa et al.	2011	The effects of MMPs on cognitive functioning	MMPs may improve attention, memory, and some executive functions, but more research is needed.
17.	Evaluating the Mindfulness Attention Awareness Scale (MAAS)	Van Dam et al.	2010	Psychometric evaluation of the MAAS	The MAAS may have limitations in accurately measuring Mindfulness; further research is needed.
18.	The Relationship Between Mindfulness and Big Five Personality Traits	Giluk	2009	Associations between Mindfulness and personality traits	Mindfulness is significantly correlated with all Big Five personality traits, but the strongest connection is with neuroticism

S.No.	Study	Authors	Year	Focus	Key Findings
					and conscientiousness.
19.	Development and Validation of the Philadelphia Mindfulness Scale	Cardaciotto et al.	2008	A new tool to measure Mindfulness	The Philadelphia Mindfulness Scale is a reliable tool with two subscales: acceptance and present-moment awareness.
20.	The Freiburg Mindfulness Inventory (FMI)	Walach et al.	2006	Development and validation of the FMI	The FMI is a reliable and valid tool to measure Mindfulness.

Source: Compiled by the author

Summary

Mindfulness, as defined by Kabat-Zinn (1991), refers to non-judgmental, present-moment awareness. This approach has been shown to enhance cognitive abilities and resilience across various fields. In information technology, mindfulness improves cognitive capabilities essential for navigating complex environments (Carlo et al., 2012). Similarly, in educational settings, mindfulness interventions foster teacher well-being and resilience (Hwang et al., 2017). In organisational contexts, mindfulness enhances decision-making and stress management (Sutcliffe et al., 2016; Linnenluecke et al., 2017), contributing to higher reliability and performance. Therapeutically, mindfulness interventions have been effective in reducing symptoms of substance use disorders and enhancing psychological health (Chiesa et al., 2014; Cavanagh et al., 2014). Moreover, mindfulness supports organisational readiness for change (Gärtner et al., 2013), with ongoing methodological advancements aiming to refine mindfulness assessment tools for greater precision and applicability (Sauer et al., 2013).

HROs are characterized by their transformative impact on safety, resilience, and operational reliability. These organisations are expanding their principles beyond traditional high-risk industries into areas such as healthcare (Dwyer et al., 2023), mining (Howe et al., 2023), and construction (Enya et al., 2020). Cross-sectoral research emphasizes the importance of proactive risk management and adaptive strategies (Sawyerr

et al., 2020; Mellor et al., 2015; Tolk et al., 2015). Trust dynamics within HROs are critical for fostering secure work environments (Schöbel et al., 2009), and tools such as debriefing and simulation enhance communication and resilience in healthcare (Serou et al., 2021; Karalis et al., 2018).

The integration of mindfulness within HROs further enhances organisational effectiveness, safety, and innovation. In healthcare, mindfulness interventions reduce burnout and improve psychological well-being (Coo et al., 2018; Bazarko et al., 2013), while sensitivity to operations and resilience are crucial for maintaining safety (Høyland et al., 2018). In the software sector, robust HRO practices are linked to sustained innovation (Vogus et al., 2003). Mindfulness fosters adaptive responses in challenging environments (Fraher et al., 2017) and enhances awareness in information systems (Dernbecher et al., 2017). Additionally, mindfulness supports resilience and innovation (Breuer et al., 2011; Williams et al., 2010) and positively influences attitudes toward organisational change (Avey et al., 2008). The study of extreme contexts in management emphasizes the need for resilience and effective communication strategies (Hällgren et al., 2018).

Organisational collective mindfulness, which involves shared awareness among members, enhances resilience and proactive risk management in HROs (Weick & Sutcliffe, 2006) and improves safety culture in healthcare (Vogus & Sutcliffe, 2012). It aids in strategic decision-making (Ginsberg & Venkatraman, 1985), promotes innovation in educational settings (Carmeli & Josman, 2006), and reduces workplace stress (Jaremka et al., 2009). Mindfulness fosters creativity in education (Henriksen et al., 2020) and holistic approaches in sustainability (Wamsler et al., 2018). Addressing role conflict in healthcare through mindfulness is effective (Valentine et al., 2010), as is fostering workplace spirituality (Luis Daniel, 2010). Safety culture in nursing benefits from the Safety Organizing Scale (Vogus et al., 2007), and mindfulness in schools promotes trust and innovation (Hoy et al., 2006). Addressing organisational silence is crucial for patient safety (Henriksen et al., 2006), and entrepreneurial mindfulness leverages past experiences for innovation (Rerup, 2005).

Measuring mindfulness, a construct encompassing attentional focus, awareness, and non-judgmental acceptance, presents both theoretical and practical challenges. Tools like the Five Facet Mindfulness Questionnaire (FFMQ) by Baer et al. (2006) aim to quantify mindfulness across various contexts and populations (Donald et al., 2019).

Challenges in studying mindfulness and sustainable consumption have been noted (Fischer et al., 2017), while measuring equanimity in mindfulness is emphasized for assessing well-being (Felver et al., 2016). The efficacy of mindfulness-based interventions in improving mental and physical health is well-documented (Gotink et al., 2015). Furthermore, mindfulness is linked to enhanced emotion regulation (Roemer et al., 2015), brain activity modulation (Lomas et al., 2015), and effective management of obesity-related eating habits (O'Reilly et al., 2014). The Child and Adolescent Mindfulness Measure (CAMM) has been validated for youth well-being (de Bruin et al., 2014). Collectively, these studies underscore the benefits of mindfulness and the need for robust measurement tools to advance both research and practical applications.

2.3 Research Gaps

Based on the literature reviewed several research gaps can be identified:

- **Limited Research in Indian Context**

There is a conspicuous absence of empirical studies specifically examining the direct relationship between Mindfulness and organisational reliability within Indian corporate environments as most of the extant literature is on routine-based quality and reliability management (Donald et al., 2019; Fischer et al., 2017).

- **Sector-Specific Application**

Existing studies predominantly focus on sectors like healthcare and education in Western contexts, with insufficient exploration of Mindfulness's impact on reliability in sectors crucial to India's economy, such as manufacturing and aviation (Sutcliffe et al., 2016; Coo et al., 2018).

- **Cultural Nuances**

The influence of cultural factors on the adoption and effectiveness of Mindfulness practices in enhancing organisational reliability in India remains underexplored (Sutcliffe et al., 2011; Vogus & Sutcliffe, 2012).

- **Methodological Refinement**

While some studies highlight methodological challenges in measuring Mindfulness comprehensively across diverse populations, there is a need for culturally sensitive measurement tools tailored to the Indian context (Chiesa, 2013; Bergomi et al., 2013).

- **Integration of Mindfulness into HROs**

Despite the growing interest in HROs globally, there is limited research on how Mindfulness can be integrated into Indian organisational contexts to enhance reliability and safety (Vogus et al., 2003; Dwyer et al., 2023).

- **Non-meditative Approaches**

Exploration of non-meditative means to cultivate Mindfulness within Indian organisations, such as through cognitive-behavioral interventions or organisational culture development, remains an underexplored area (Rerup, 2005; O'Reilly et al., 2014).

- **Leadership and Organisational Culture**

Research gaps exist in understanding how leadership practices and organisational culture can be influenced by Mindfulness to foster high reliability characteristics in Indian settings (Breuer et al., 2011; Williams et al., 2010).

Addressing these gaps through empirical research could significantly advance our understanding of how Mindfulness practices can contribute to enhancing organisational reliability in the specific cultural and operational contexts of Indian businesses. A focused study on the connection between Mindfulness and reliability in Indian corporate contexts promises to provide critical insights into how Mindfulness can foster dependability within organisational settings. This research would not only fill a significant void in the current literature but also guide organisational practices in India by considering the country's unique cultural nuances and organisational dynamics. Ultimately, such research holds the potential to inform strategic initiatives aimed at enhancing reliability and performance through Mindfulness practices tailored to the Indian business landscape.

2.4 Hypotheses of the Study

Based on the Literature Review and the Research Gaps, following hypotheses that have to be tested to achieve the objectives of this research:

H1: 'Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE)' significantly influences the overall reliability of the organisation.

H2: 'Commitment to Restore the System or Resilience (CTR)' significantly influences the overall reliability of the organisation.

H3: 'Pre-occupation with Failure rather than Success (SAFETY)' significantly influences the overall reliability of the organisation.

H4: 'Concern for Correcting Errors (CE)' significantly influences the overall reliability of the organisation.

H5: 'Sensitivity to Operations (SO)' significantly influences the overall reliability of the organisation.

H6: Organisational Collective Mindfulness significantly influences overall reliability of the organisation.

Chapter 3

Research Methodology

3.1 Overview

In the preceding chapter, an extensive review of literature concerning Mindfulness and organisational Reliability was undertaken. This review identified research gaps that the current study aims to address. This chapter aids in the creation of a detailed plan and outlines the procedures that are employed in research methods, categories of data, sampling, research area, number of participants, research design, conceptual design, and data-gathering methods and methodologies. A quantitative research approach is applied to understand the relationship between Mindfulness and organisational Reliability in Indian firms. The dimensions of Mindfulness and organisational Reliability, described by different authors, as discussed in the literature review section, have been referred to, while analysing the different constructs and in the design of the questionnaire. Similarly, review on the effect of Mindfulness on performance, safety and reliability of the organisation in the previous chapter, assisted in analysing it as a construct, with associated dimensions, thereby helping in the designing of the questionnaire.

This chapter contains the conceptual framework developed for this study (Fig 3.1) describing the proposed relationship of different aspects, under each tested construct. The proposed framework shows the way collective Mindfulness (an independent variable) affects organisational Reliability (dependent variable).

3.2 Research Design

This study was conducted in broad three phases. The first phase was to identify Indian defence organisations engaged in aircraft maintenance operations and then establish if these organisations were functioning as HROs. The second phase was to prove that these selected organisations possessed the characteristics of Collective Mindfulness. The next phase was to check whether Collective Mindfulness was a factor contributing to organisational Reliability in the selected organisations.

➢ **Phase I - Identification of selected organisations as HROs**

The identified organisations for the study are the Indian Public Sector organisations engaged in Defence aviation maintenance, research and related operations namely Nuclear Power Corporation of India (NPCIL), Hindustan Aeronautics Ltd (HAL), Directorate General of Quality Assurance (DGQA), Indian Army (IA), and Indian Air Force (IAF). These organisations were identified as HROs on the basis of the following eight characteristics that differentiate HROs from other organisations:

- Hyper complexity
- Tight coupling
- Compressed time factors
- More than one critical outcome that must happen simultaneously
- Extreme hierarchical differentiation
- Large numbers of decision makers in a complex communication network
- Degree of accountability
- High frequency of immediate feedback about decisions

These characteristics were confirmed by employees of these select Indian organisations through questionnaire, interviews, and personal interactions. A high score in the above questionnaire confirms the HRO characteristics in an organisation. The questionnaire was developed to ensure all characteristics were assessed. The result determines the fact that these selected organisations are highly reliable organisations wrt HRO characteristics from an employee's perspective as shown in table 3.1.

Table 3.1: *Identification of HROs in Select Indian Organisations*

Name of the Organisation	Categories of HRO				Total Responses
	Average Reliable Organisation (8-20)	Moderately Reliable Organisation (21-40)	Highly Reliable Organisation (41-60)	Absolute Reliable Organisation (61-80)	
NPCIL	0	19	37	37	93
HAL	0	15	45	45	105
DGQA	0	13	38	57	108
ARMY	0	22	43	46	111
IAF	0	3	62	56	121
Total Responses	0	71	226	241	538

Source: Compiled by the author from primary data

The questionnaire was also checked for associations between categorical variables using chi square, phi and Cramer's V test. All the selected organisations were found to possess all the required characteristics of HROs hence they were proven to be HROs for further study.

- **Phase II – Identification of indicators for Collective Mindfulness**

Indicators for Collective Mindfulness were identified through extensive Literature Review. Literature review showed that HROs are designed to perform efficiently under extreme stress and pressure. Based on the qualitative research on HROs (e.g., Roberts 1990; Roberts, Stout, & Halpern, 1994; Bierley & Spender, 1995), Weick and his colleagues (Weick et al., 1999; Weick & Sutcliffe, 2001) suggested that collective mindfulness is the result of five processes: (1) Pre-occupation with failure, (2) Reluctance to simplify interpretations, (3) Sensitivity to operations, (4) Commitment to resilience, and (5) Deference to expertise (called under specification of structures by Weick et al., 1999).

The next step was to establish the presence of Collective Mindfulness in the selected organisations. This was done through a Questionnaire. The Questionnaire was developed to assess the presence of five characteristics of Collective Mindfulness. This questionnaire was then tested for its reliability and validity following which it was administered to the organisations under study.

- **Phase III – Establishing the relationship between Collective Mindfulness and Organisational Reliability in Selected Indian HROs**

The results of the data collected through two questionnaires were analysed to investigate complex relationships between organisational Collective Mindfulness and organisational Reliability. This study has thus adopted eight characteristics of HROs and five characteristics for Collective Mindfulness for the analysis. This study has used Partial Least Squares Structural Equation Modeling (PLS-SEM) to investigate complex relationships between organisational Collective Mindfulness and organisational Reliability.

PLS-SEM is particularly suited for exploratory research where theory development is a primary goal, especially when dealing with small sample sizes or when the measurement

model is complex. The design typically begins with clearly defined research objectives and hypotheses, which guide the construction of a conceptual model that illustrates the relationships between latent variables (constructs). The variables are organisational Collective Mindfulness and Organisational Reliability for this study

➢ **Sample**

Samples were primarily collected using a questionnaire supplemented by Focus Group Interviews. The questionnaire developed was administered both offline and online to collect data from the employees of (i) NPCIL, (ii) (HAL) (iii) DGQA (iv) Army and (v) IAF.

3.3 Variables of the Study

(a) Independent Variable

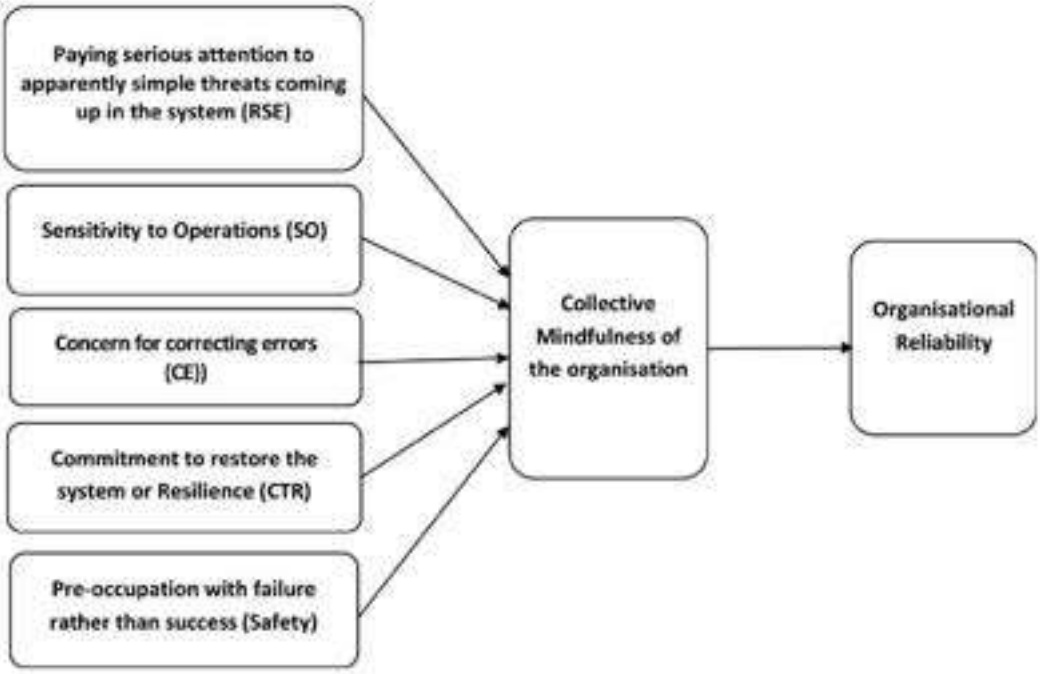
The following independent variables were formulated to establish the association between characteristics of HROs with selected Indian organisations, and the influence of Mindfulness on Organisational Reliability:

- Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE)
- Sensitivity to Operations (SO)
- Concern for Correcting Errors (CE)
- Commitment to Restore the System or Resilience (CTR)
- Pre-occupation with Failure rather than Success (SAFETY)

(b) Dependent Variable

This study aims to reinforce the relationship between Mindfulness and Organisational Reliability in Indian HROs. The five factors identified from previous studies have been taken as 'independent variables' to define Collective Mindfulness of the organisation, which is influencing Organisational Reliability, taken as 'dependent variable' for this study.

3.4 Conceptual Framework



Source: Compiled by the author from literature survey

Figure 3.1: *Conceptual Framework*

3.5 Research Tool Development

There are 37 items under five constructs forming Collective Mindfulness in the conceptual framework. The formation of these five constructs are based on previous researches on HROs (e.g., Roberts 1990; Roberts, Stout, & Halpern, 1994; Bierley & Spender, 1995, Weick et al., 1999; Weick & Sutcliffe, 2001), which suggested that Collective Mindfulness is the result of five processes: (1) Pre-occupation with failure, (2) Reluctance to simplify interpretations, (3) Sensitivity to operations, (4) Commitment to resilience, and (5) Deference to expertise (called under specification of structures by Weick et al., 1999). Out of 37 items of these five constructs, 09 items are under 'Paying Serious Attention to Apparently Simple Threats Coming up in The System (RSE)', 08 are under 'Sensitivity to Operations (SO)' 07 are under 'Concern for Correcting Errors (CE)', 07 are under 'Commitment to Restore the System or Resilience (CTR)' and 06 are under 'Pre-occupation with Failure rather than Success or (SAFETY)'.

The sample chosen for this study includes employees of selected Indian Public Sector organisations engaged in aircraft operations at different levels of hierarchy. Data was checked for quality to ensure treatment of missing data, outliers, and response biases. PLS-SEM modeling involves specifying the structural model that links the constructs based on theoretical expectations. Further relationship between Mindfulness and Organisational Reliability was established with the help of Structural Equation Modeling (SEM). Estimation of the model parameters was conducted using PLS-SEM software, to assess path coefficients and model fit indices (e.g., goodness-of-fit, predictive validity). Overall, research design using PLS SEM has been used to integrate theory development, measurement validation, and statistical analysis to uncover complex relationships and contribute to knowledge advancement in the field of Collective Mindfulness and Organisational Reliability.

3.6 Research Instrument

A questionnaire was formulated as the research instrument for this study. Samples were collected via both the online and offline distribution of the questionnaire. Designing a questionnaire for PLS-SEM involved a systematic approach to ensure the reliability and validity of data collection. For this study, each construct was operationalized into measurable indicators that accurately reflected its conceptual meaning. Items were carefully selected or developed, ensuring they were clear, unambiguous, and directly relevant to their respective constructs. The internal consistency of items was evaluated using techniques like Cronbach's alpha, ensuring that each set of items reliably measured its intended construct. Construct validity was further assessed through Confirmatory Factor Analysis (CFA), which validated the measurement model by confirming that items load onto their respective constructs and demonstrate Convergent and Discriminant Validity.

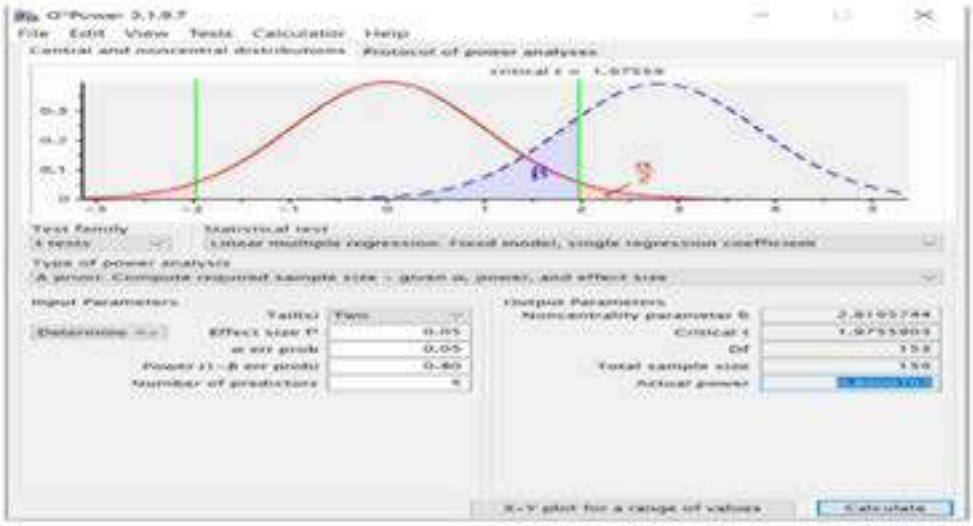
3.7 Reliability and Validity of the Questionnaires

Measurement instrument development is critical, involving the selection or creation of indicators that represent each latent construct accurately. These indicators are validated through techniques like EFA, CFA and reliability testing to ensure they measure their intended constructs reliably. The indicators used to define Collective Mindfulness are - Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE),

Sensitivity to Operations (SO), Concern for Correcting Errors (CE), Commitment to Restore the System or Resilience (CTR) and Pre-occupation with Failure rather than Success (SAFETY).

3.8 Sample Size

Primary data of 538 respondents was collected from five different organisations as mentioned above. PLS-SEM method has been used in the data analysis. PLS-SEM has higher levels of statistical power in situations with complex model structures or smaller sample sizes. PLS-SEM-like any statistical technique-requires researchers to consider the sample size against the background of the model and data characteristics (Hair, Ringle, & Sarstedt, 2011). G*Power software was applied to investigate the minimum sample size required for our study (Faul et al., 2007). In this regard, with a power of 0.80 (1-Beta) the minimum sample required for analysis was obtained at 159 (Faul et al., 2009). However, we have applied the final data analysis with 538 respondents which seems to be a good representative of population as per the requirements of central limit theorem. Also, Kaiser-Meyer-Olkin (KMO) value of 0.906 was obtained, which was above the minimum specified value of 0.7 thereby indication the adequacy of the data (Hutcheson & Sofroniou, 1999). Also, Bartlett's Test of Sphericity was found to be significant for < 0.05, indicating a good correlation between the variables (Kaiser et al., 1974).



*Source: Compiled by the author using G*Power software*

Figure 3.2: *G*Power Analysis*

3.8 Ethical Considerations for Data Collection

This study respected the ethical considerations in data collection ensuring the integrity and respect for participants in research. Participants were fully informed about the study's purpose, risks, and benefits before they agreed to participate. They were also given the freedom to withdraw at any time. Complete confidentiality was maintained and participants' identities and responses have been protected through anonymization and coding. Adequate measures have been deployed to ensure safety and security of the data collected, restricting access to only authorized individuals.

3.9 Summary

This chapter presents the research plan, types of data and procedures used, instruments employed, study area, and method. The study's objectives are achieved by employing primary data. This chapter explores the study technique and conceptual framework. The utilization of research methodologies and conceptual design is also seen in this chapter. The research is conducted in India. The individuals involved in this research are staff members of selected Indian HROs. The study has a total of 538 respondents, who have responded to a systematic and structured questionnaire that was circulated both online and offline. The study has employed the research tools of Regression, Mean, Chi-square test, Standard Deviation and Partial Least Squares Structural Equation Modeling (PLS-SEM). The data collection process ensured that data was kept anonymous and confidential.

Chapter 4

Data Analysis and Interpretation

4.1 Overview

This chapter discusses the findings and interpretations of the statistical analysis done in the study to achieve the research objectives. The chapter is divided into four sections. Sec 4.1 examined these organisations for characteristics of an HRO. Sec 4.2 explains the factors measuring the Mindfulness indicators for different selected Indian organisations. Sec 4.3 discusses the relationship between Mindfulness and Reliability and finally, Sec 4.4 explains the opportunities for developing these characteristics within the organisations to enhance reliability.

4.2 Organisations Selected for Study

In the study, the primary data is collected from the employees of Indian Public Sector organisations engaged in Defence aviation maintenance, research and related operations namely NPCIL, HAL, DGQA, Army, and IAF. These organisations were identified as HROs as mentioned in previous chapter and total 538 responses were collected from these organisations. The number of the responses collected from these organisations are shown below:

Table 4.1: *Organisations Included for Data Collection*

Organisation	Responses
NPCIL	93
HAL	108
DGQA	105
ARMY	111
IAF	121
Total	538

Source: Author's compilation from primary data

4.3 Objective 1: To assess Select Indian Organisations for Characteristics of an HRO

The ability of a few organisations to operate successfully consistently in complex, and hazardous situations was studied by researchers at the University of California-Berkeley in

1984 (Rochlin, 1996). Roberts (1989) identified high-risk organisations that were able to operate consistently, over long periods without any failures and disastrous effects on the public and environment. These organisations were called HROs. According to Roberts and Rousseau (1989), HROs possess the following eight characteristics that differentiate HROs from other organisations:

- Hyper complexity
- Tight coupling
- Compressed time factors
- More than one critical outcome that must happen simultaneously
- Extreme hierarchical differentiation
- Large numbers of decision makers in a complex communication network
- Degree of accountability
- High frequency of immediate feedback about decisions

These characteristics were confirmed by employees of these select Indian organisations through a questionnaire, interviews, and personal interactions. The first four characteristics define the difficult operating environment the firms operate in, which could lead to a system accident, and the last four characteristics define a system that prevents accidents. A high score in the above questionnaire confirms the HRO characteristics in an organisation. There are four categories of High Reliable Organisations based on the score obtained in the above questionnaire:

Table 4.2: *Categories of High Reliable Organisations*

S.No.	Score	Category
1.	8-20	Average Reliable Organisation
2.	21-40	Moderately Reliable Organisation
3.	41- 60	Highly Reliable Organisation
4.	61-80	Absolute Reliable Organisation

Source: Author's compilation from primary data

The result indicates that the all the eight HRO characteristics are found at a considerably high level in all the five selected Indian Organisations, Thus, it can be concluded that all the selected organisations qualify to be considered as HROs. The frequency distribution

of the category of reliable HROs is estimated and the results are reported in table shown below:

Table 4.3: *Classification of HROs in Select Indian Organisations*

		Frequency	Percent
Category wrt selected Indian HROs	Average Reliable Organisation	0	0 %
	Moderately Reliable Organisation	71	13.2 %
	Highly Reliable Organisation	226	42.0 %
	Absolute Reliable Organisation	241	44.8 %
	Total	538	100.0 %

Source: Author's compilation from primary data

The result reported that no respondents put the organisations in average reliable organisations, very few (13.2 %) of the respondents perceive the organisations as moderately reliable organisations. (42 %) perceive as highly reliable organisation and lastly 44.8 percent perceive the as an absolute reliable organisation. The frequency distribution of the category of HRO organisations is shown in the table. The result concludes that these selected organisations are highly reliable organisations wrt HRO characteristics from an employee's perspective.

Table 4.4: *Cross Tabulation: Organisation v/s Category of HROs*

			Category of HRO				Total
			Average Reliable Organisation	Moderately Reliable Organisation	Highly Reliable Organisation	Absolute Reliable Organisation	
Name of the Organisation	NPCIL	Frequency (%)	0 (0 %)	19 (20.0%)	37 (40.0%)	37 (40.0%)	93 (100.0%)
	HAL	Frequency (%)	0 (0 %)	15 (14.3%)	45 (42.9%)	45 (42.9%)	105 (100.0%)
	DGQA	Frequency (%)	0 (0 %)	13 (11.8%)	38 (35.3%)	57 (52.9%)	108 (100.0%)
	ARMY	Frequency (%)	0 (0 %)	22 (19.4%)	43 (38.9%)	46 (41.7%)	111 (100.0%)
	IAF	Frequency (%)	0 (0 %)	3 (2.6%)	62 (51.3%)	56 (46.2%)	121 (100.0%)
Total Frequency (%)			0 (0 %)	71 (13.2%)	226 (42.0%)	241 (44.8%)	538 (100.0%)

Source: Analysis of primary data collected

Table 4.5: *Chi-Square Tests: Organisation v/s Category of HROs*

Hypothesis Testing	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	86.216***	7	.000
Likelihood Ratio	79.824***	7	.000
Linear-by-Linear Association	1.142	1	.285
N of Valid Cases	538		

*** significant at 1 percent level; two tailed test

Source: Analysis of primary data collected

The chi-square test is carried out to check if two categorical variables are related or independent. As mentioned in Table 4.4, it signifies that there is an association between type of organisation and the category of HROs follow in them. The p-value is less than 5 percent and is further significant at a 1 percent level. The value of $\chi 2$ is 86.126 is above the tabular value of 4 to represent the degree of association among organisation and categories of HROs as mentioned in cross tabulation results in Table 4.4.

Table 4.6: *Directional Measures: Organisation v/s Category of HROs*

			P-Value	Asymp. Std. Error[a]
Nominal by Nominal	Phi and Cramer's Test	Phi and Cramer's V	.035	.036
		Organisation Dependent	.036	.038
		Category of HROs	.033	035

a. Not assuming the null hypothesis

b. Using the asymptotic standard error assuming the null hypothesis.

Source: Analysis of primary data collected

The results of $\chi 2$ test are further validated by the directional measure test as represented by phi and Cramer's V test, where the p-value is clearly less than 5 percent level. Thus, the association test is established among the kind of organisation and category of HROs in the present study.

4.4 Objective 2: To Examine the Mindfulness Indicators in Select Indian Organisations

This section discusses about the Mindfulness indicators in the select Indian organisations (NPCIL, HAL, DGQA, Army and IAF). The primary data is collected with the help of

survey. The thirty-seven statements on 1 to 5 interval scale are included in the questionnaire along with selected demographic profiles. These statements were identified from the existing literature measuring the different dimensions of organisation Mindfulness. The first objective includes the discussion about the results of Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Descriptive Analysis, Reliability Analysis etc.

4.4.1 Indicators of Organisational Mindfulness

Mindfulness is a solution for complexity and tight coupling, enables HROs to overcome the complexity and tight coupling inherent in their technologies. Mindfulness can be referred to as a referent shift consensus model. At the individual level, Mindfulness represents "a heightened state of involvement and wakefulness or being in the present." Mindfulness at individuals indicates highly sensitive to their environments, open to new information and different points of view, and they carefully consider context in processing information, create new categories in which to classify incoming information, rather than relying on prior classifications, focus on processes rather than outcomes and closely to the steps involved in reaching a goal. Mindful organisations have a collective awareness of detail that "facilitates the construction, discovery, and correction of unexpected events capable of escalation" (Weick and Quinn,1999). Collective Mindfulness is manifest in organisations by their extremely sensitive to fluctuations in their environments, continuously update their assumptions, perspectives, and classifications of events, appreciate the importance of context. Collective Mindfulness enhances an organisation's ability to detect and manage unexpected events and, thus, minimize errors.

In this study the primary data is collected with the help of survey conducted wrt the Mindfulness Indicators in the selected Indian organisations (NPCIL, HAL, Indian Army, Indian Air Force, DGQA). The thirty-seven statements (measured on 1 to 5 interval scale, where 1 represents strongly disagree and 5 represents strongly agree), are included in the questionnaire along with selected demographic profiles. These statements were identified from the existing literature measuring the different dimensions of organisation Mindfulness. In order to identify the different dimensions of the organisation

Mindfulness the EFA is applied using principal component analysis and "Varimax" orthogonal rotation. The results of EFA are discussed below:

4.4.2 KMO and Bartlett's Test

The EFA method is suitable if it satisfies the two criteria of sampling adequacy and presence of significant correlation between the different pairs of statements included in the factor analysis. The minimum expected value of KMO estimate is 0.7. The result of the KMO is reported in the table, where the KMO value is found to be 0.906, greater than the minimum required value of 0.7. Thus it can be concluded that the sampling adequacy of the data is sufficient. Further, the presence of significant correlation between the different pairs of statements is examined with the help of Bartlett test of sphericity. The result of the Bartlett test of sphericity is reported in the table. The result reported the Chi square estimated value as 4396.139 with p value less than 5 percent level of significance. Hence, the results clearly explain that the correlation matrix is not an identity matrix. Hence, there exist a relationship between two variables or a set of variables to be further categorised as independent and dependent variables. The results also represent that the factor loadings are close to -1 and +1 and thus factors to be obtained strongly influences the variables in the present study. Thus, the significant correlation between the different statements included in the factor analysis is confirmed, which is helpful in identifying the latent factors measuring the Organisational Mindfulness.

Table 4.7: *KMO and Bartlett's Test*

Kaiser-Meyer-Olkin (KMO) Estimate of Sampling Adequacy		**0.906**
Bartlett's Test of Sphericity	Approx. Chi-Square	4396.139
	Df	259
	Sig.	0.000***

Source: Analysis of primary data collected ***significant at 1 percent level

4.4.3 Initial and Extracted Communalities

The thirty-seven statements are included in the factor analysis algorithm. The communality of the extracted factors is estimated which indicates the percentage of variations of the different statements explained by the factors. Initially, all the statements can be explained

100 percent, however, it reduces after the extraction of the factor. The minimum expected communality of statements after the extraction of the latent factors is greater than 50%. The estimated initial communalities and extracted communalities of the different statements included in the study are reported in table. The result reported that the initial communalities of all the statements are one and extracted communalities are greater than 0.5. Thus, it can be concluded that the all the statements are well explained by the latent factors extracted as a result of factor analysis.

Table 4.8: *Initial and Extracted Communalities*

	Initial	Extraction
SAFTY1- Employees have a sense of safety	1.000	.788
SAFTY2- Every employee feels accountable for the safety culture in the organisation	1.000	.761
SAFTY3- Top Management pays as much attention to manage unexpected events as formal organisational goals	1.000	.638
SAFTY4- Employees are very much aware of the processes that could affect safety	1.000	.755
SAFTY5- We spend time identifying the activities that could become hazardous to employees and customers	1.000	.661
SAFTY6- Top Management pays attention to the needs and wants of the employees, customers or other interested parties	1.000	.759
CE1-We focus more on non-occurrences of failures more than the occurrence of success of events	1.000	.728
CE2- We treat near misses and errors as information about the health of our operations and try to learn from them	1.000	.639
CE3- We update our procedures after experiencing a close call or near miss to incorporate our new experiences and understanding	1.000	.686
CE4- Hiding mistakes by employees is difficult in our system of working	1.000	.737
CE5- Employees are inclined to report mistakes that have significant consequences even if nobody notices	1.000	.736
CE6- Managers seek out and encourage people to report wrong practices	1.000	.641
CE7- Employees are rewarded for detection of errors in system	1.000	.597
RSE1 - Employees follow procedures and take nothing for granted	1.000	.703
RSE2- Questioning to the concerned person, who is involved in operation, is encouraged in the organisation	1.000	.609
RSE3-We are committed to bring continuous improvement	1.000	.673
RSE4- Employees feel free to bring up problems and tough issues in front of authorities	1.000	.697
RSE5- We carry out thorough analysis to better understand the nature of problems that come up	1.000	.722
RSE6- Employees are encouraged to express different views and opinions	1.000	.711

	Initial	Extraction
RSE7: When something unexpected happens, employees focus on listening and considering a complete analysis of the situation than advocating their views	1.000	.687
RSE8- We appreciate employees questioning the process concerning with safe operations	1.000	.687
RSE9- We appreciate employees questioning the policies concerning with safe operations	1.000	.670
SO1- We maintain strict worker to supervisor ratio for all the activities on a day-to-day basis	1.000	.706
SO2- If problems occur, someone with authority is always available to act on it	1.000	.531
SO3- Supervisors are readily available to take necessary actions	1.000	.717
SO4- During an average day, sufficient number of workers are available to report a clear picture of a situation in an operation	1.000	.567
SO5- Employees are always looking for feedback about things that aren't going right	1.000	.599
SO6- Employees are familiar with other connected operations beyond their own job	1.000	.619
SO7- Employees have access to resources if unexpected situations come up	1.000	.538
SO8- Managers monitor workloads and are able to obtain additional resources if necessary	1.000	.663
CTR1- We give more attention to improvement of present situation rather than waiting for incident to happen in future	1.000	.653
CTR2- Employees are given appropriate training on work they do	1.000	.643
CTR3- Development of employees' skill is given importance	1.000	.674
CTR4- Challenging assignments are encouraged	1.000	.720
CTR5- Employees are encouraged for innovations	1.000	.664
CTR6- Building employee's competence and response performances are given importance	1.000	.679
CTR7- Employees are encouraged to rework on the failed project and forward solution	1.000	.645

Source: Author's compilation from primary data

4.4.4 PCA Varimax Rotation

The EFA is applied on the responses collected in the study using PCA method. In order to extract the independent factors, the orthogonal rotation "Varimax" is used in the study. The PCA method estimates the Eigen values of the different possible latent factors, however only the factors having Eigen value greater than 1 are extracted for the study. The results reported than the thirty-seven statements included in the factor analysis can be reduced to six factors measuring the different dimensions of the organisational Mindfulness. These six

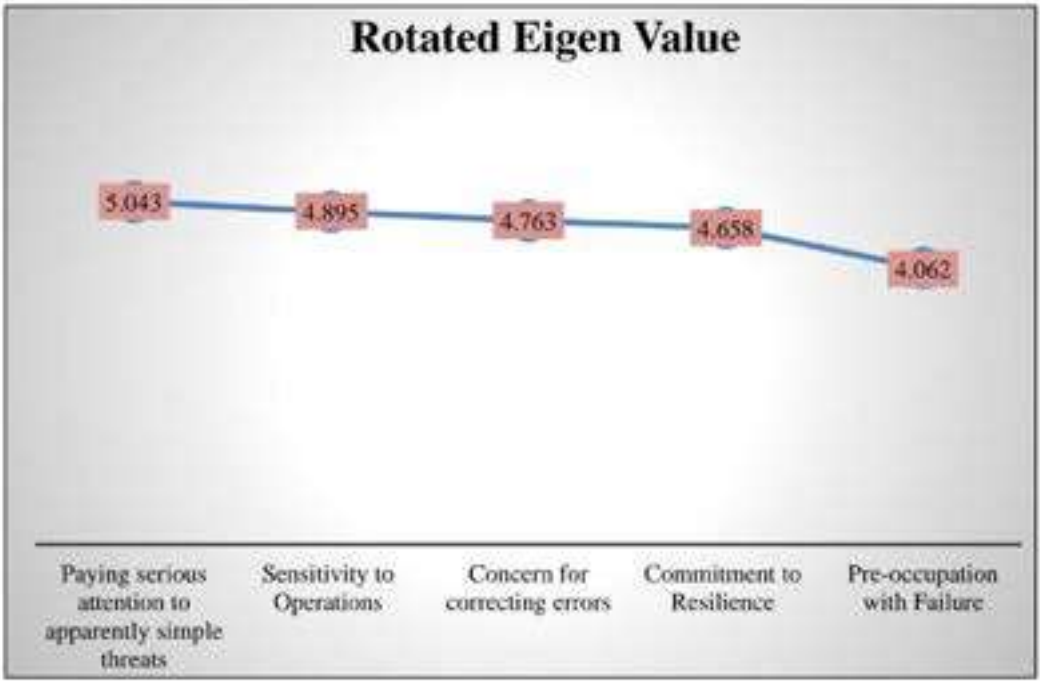
latent factors are able to explain the 66.77 % of the variations of the entire responses which indicates the presence of good fit of the factor analysis.

Table 4.9: *Total Variance Explained with PCA & Varimax Rotation*

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.504	36.498	36.498	13.504	36.498	36.498	5.043	13.630	13.630
2	3.289	8.889	45.387	3.289	8.889	45.387	4.895	13.230	26.861
3	2.928	7.913	53.301	2.928	7.913	53.301	4.763	12.874	39.734
4	2.139	5.782	59.082	2.139	5.782	59.082	4.658	12.588	52.322
5	1.700	4.595	63.677	1.700	4.595	63.677	4.062	10.978	63.301
6	**1.144**	**3.093**	**66.770**	**1.144**	**3.093**	**66.770**	**1.284**	**3.469**	**66.770**
7	.977	2.640	69.410						
8	.806	2.178	71.588						
9	.747	2.019	73.607						
10	.705	1.905	75.512						
11	.678	1.832	77.344						
12	.621	1.677	79.021						
13	.588	1.590	80.611						
14	.539	1.457	82.068						
15	.515	1.391	83.458						
16	.476	1.286	84.744						
17	.445	1.203	85.947						
18	.433	1.171	87.118						
19	.417	1.127	88.245						
20	.397	1.074	89.319						
21	.366	.990	90.309						
22	.356	.961	91.269						
23	.340	.920	92.189						
24	.326	.882	93.072						
25	.292	.790	93.862						
26	.277	.747	94.609						
27	.266	.718	95.327						
28	.250	.676	96.004						
29	.224	.605	96.609						
30	.214	.577	97.186						
31	.202	.546	97.732						
32	.185	.500	98.232						
33	.166	.447	98.679						
34	.153	.414	99.094						
35	.128	.346	99.439						
36	.106	.288	99.727						
37	.101	.273	100.000						

Extraction Method: Principal Component Analysis.

Source: Author's compilation from primary data



Source: Author's compilation from primary data

Figure 4.1: *Rotated Eigen Value*

4.4.5 Rotated Eigen Matrix

The rotated Eigen values of the extracted factors are shown in figure 4.1. The factors found to have Eigen value greater than 1. The factor loadings, which indicates the correlation between the items and the extracted factors, are reported in table 4.9. The results indicate that each item included in the factor analysis have high factor loadings with one factor (greater than 0.5) and low factor loadings with other factors. Thus, the factor analysis represents the discriminant as well as convergent validity as indicates by factor loadings. The sixth factor is dropped due to the reason that no single item is found to have high factor loadings with factor six. The five factors are extracted for the further.

Table 4.10: *Rotated Component Matrix*

	Component					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
RSE6- Employees are encouraged to express different views and opinions	.746					
RSE2- Questioning to the concerned person, who is involved in operation, is encouraged in the organisation	.723					
RSE1 - Employees follow procedures and take nothing for granted	.710					
RSE3-We are committed to bring continuous improvement	.695					
RSE4- Employees feel free to bring up problems and tough issues in front of authorities	.670					
RSE5- We carry out thorough analysis to better understand the nature of problems that come up	.662					
RSE7: When something unexpected happens, employees focus on listening and considering a complete analysis of the situation than advocating their views	.656					
RSE8- We appreciate employees questioning the process concerning with safe operations	.642					
RSE9- We appreciate employees questioning the policies concerning with safe operations	.557					
SO3- Supervisors are readily available to take necessary actions		.826				
SO1- We maintain strict worker to supervisor ratio for all the activities on a day-to-day basis		.796				
SO8- Managers monitor workloads and are able to obtain additional resources if necessary		.735				
SO6- Employees are familiar with other connected operations beyond their own job		.732				
SO4- During an average day, sufficient number of workers are available to report a clear picture of a situation in an operation		.721				
SO2- If problems occur, someone with authority is always available to act on it		.690				
SO7- Employees have access to resources if unexpected situations come up		.625				
SO5- Employees are always looking for feedback about things that aren't going right		.601				
CE5- Employees are inclined to report mistakes that have significant consequences even if nobody notices			.798			

	Component					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
CE3- We update our procedures after experiencing a close call or near miss to incorporate our new experiences and understanding			.785			
CE1-We focus more on non-occurrences of failures more than the occurrence of success of events			.765			
CE4- Hiding mistakes by employees is difficult in our system of working			.735			
CE6- Managers seek out and encourage people to report wrong practices			.717			
CE2- We treat near misses and errors as information about the health of our operations and try to learn from them			.698			
CE7- Employees are rewarded for detection of errors in system			.640			
CTR3- Development of employees' skill is given importance				.782		
CTR1- We give more attention to improvement of present situation rather than waiting for incident to happen in future				.777		
CTR2- Employees are given appropriate training on work they do				.763		
CTR5- Employees are encouraged for innovations				.760		
CTR4- Challenging assignments are encouraged				.742		
CTR6- Building employee's competence and response performances are given importance				.703		
CTR7- Employees are encouraged to rework on the failed project and forward solution				.697		
SAFTY4- Employees are very much aware of the processes that could affect safety					.773	
SAFTY6- Top Management pays attention to the needs and wants of the employees, customers or other interested parties					.764	
SAFTY2- Every employee feels accountable for the safety culture in the organisation					.747	
SAFTY1- Employees have a sense of safety					.743	
SAFTY3- Top Management pays as much attention to manage unexpected events as formal organisational goals					.664	
SAFTY5- We spend time identifying the activities that could become hazardous to employees and customers					.651	

Source: Analysis of primary data collected

4.3.6 Descriptive Analysis

The extracted five factors are named as:

- **Factor 1: Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE)**
- **Factor 2: Sensitivity to Operations (SO)**
- **Factor 3: Concern for Correcting Errors (CE)**
- **Factor 4: Commitment to Restore the System or Resilience (CTR)**
- **Factor 5: Pre-occupation with Failure rather than Success (SAFETY)**

These extracted factors are discussed below:

Factor 1: Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE)

RSE, is a belief that the environment and the tasks of the organisation are interactively complex (Roberts, 1990; Rochlin, 1993; Schulman, 1993a, 1993b; La Porte, 1994). It is a belief that simplifying this complexity is risky; richness of information and interpretations must match the complexity of the environment (Landau & Chisholm, 1995). Everyone in the organisation is driven to ask why something happens (Bierly & Spender, 1995). They do not rely on the first or easiest explanations of a process. In HROs, a RSE is manifested in a few practices and procedures, such as constant interaction among organisational members with divergent perspective and widespread organisational communication (Tamuz, 1994). HROs implement redundancy in their processes which turns employees into sceptics that enhance the awareness in the organisation (Bierly & Spender, 1995). Furthermore, HROs value scepticism and promote diversity. In the study, RSE is measured with the help of ten statements. The Descriptive Analysis (mean score, standard deviation, skewness, and kurtosis) is estimated and reported in table:

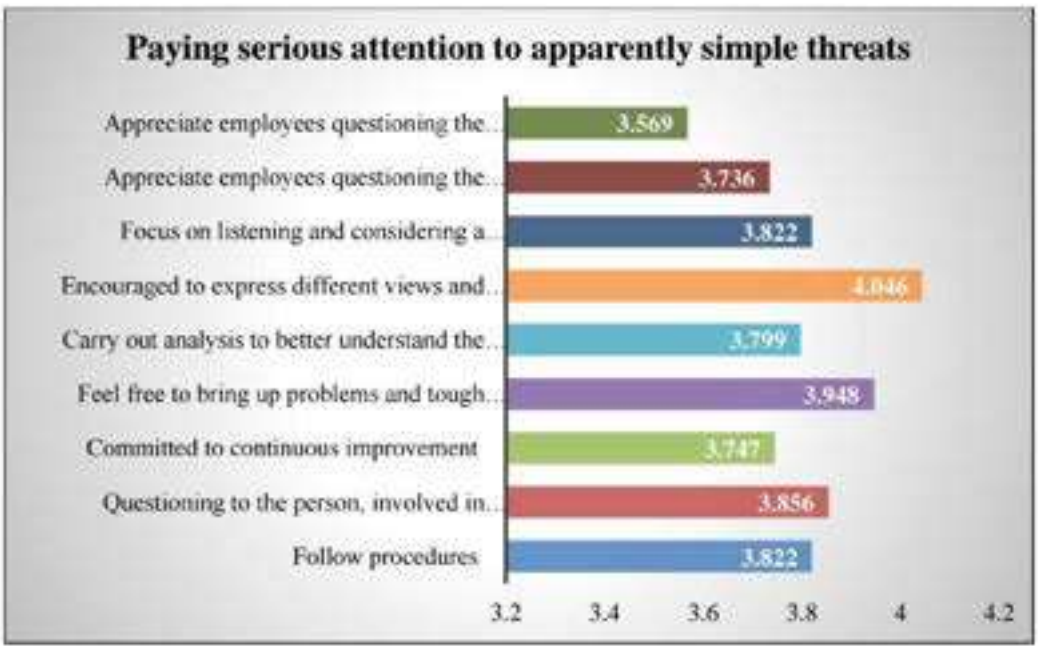
Table 4.11: *Descriptive Analysis- Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE)*

Statements	Mean	Standard Deviation	Excess Kurtosis	Skewness
RSE1 - Employees follow procedures and take nothing for granted	3.822	0.993	0.282	-0.737
RSE2- Questioning to the concerned person, who is involved in operation, is encouraged in the organisation	3.856	1.087	-0.054	-0.795
RSE3-We are committed to bring continuous improvement	3.747	1.101	-0.036	-0.787
RSE4- Employees feel free to bring up problems and tough issues in front of authorities	3.948	0.942	0.107	-0.644
RSE5- We carry out thorough analysis to better understand the nature of problems that come up	3.799	0.994	0.177	-0.79
RSE6- Employees are encouraged to express different views and opinions	4.046	0.982	-0.001	-0.828
RSE7: When something unexpected happens, employees focus on listening and considering a complete analysis of the situation than advocating their views	3.822	1.044	-0.257	-0.647
RSE8- We appreciate employees questioning the process concerning with safe operations	3.736	0.946	-0.327	-0.596
RSE9- We appreciate employees questioning the policies concerning with safe operations	3.569	0.906	-0.051	-0.348

Source: Analysis of primary data collected

The result of the Descriptive Analysis indicates that the mean score of all the statements is close to 4 in the scale of 1 to 5. The result indicates that the most of the respondents were found agree with statements indicating the RSE. The respondents were found to highly agree that they are encouraged in the organisation to express different views and opinions (mean score = 4.046). Employees also found agree that they are feeling free to bring up problems and tough issues in front of authorities (mean score = 3.948). While the part of the operations, the employees are encouraged to put their queries to other person in the same operations (mean score =3.856). The employees were agreeing that they always follow procedures and take nothing for granted (mean score=3.822) and when something unexpected happens, employees focus on listening and considering a

complete analysis of the situation than advocating their views (mean score = 3.822). The employees found to carry out analysis for better understanding of the nature of emerging problems (mean score = 3.799). The employees are also agreeing that they are committed to bring continuous improvement (mean score = 3.747). The employees were appreciated for questioning the process concerning with safe operations (mean score = 3.736) and the least mean score is found with the statement that the employees are appreciated for questioning the policies concerning with safe operations (mean score = 3.569). The standard deviations of the responses indicate the presence of variations in the responses. The skewness and kurtosis of the responses are found to be less than 1 indicating that the distributions of the responses are near to the normal distribution. The mean score of the responses against the different statements is shown below:



Source: Author's compilation from primary data

Figure 4.2: *Relation with Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE)*

Factor 2: Sensitivity to Operations (SO)

SO, is a belief that diverse information and viewpoints should be widely shared so that employees individually and collectively develop the big picture of current organisational operations (Riley et al., 2010) Everyone watches for the number of reasons and ways by

which their work processes might break down. They are encouraged to share potential failures and create best practices (Vogus & Rerup, 2017). Situational awareness is part of the organisational culture. The knowledge gathered from past experiences and failures is helpful to understand whether the current operations need to be redesigned. It is a belief that individual and collective comprehension of the big picture, in the current moment, will facilitate error detection and prevention (Weick et al. 1999). SO is manifest in HROs in the importance they assign to system-wide knowledge for all employees, regardless of hierarchical position. HROs encourage all employees to be aware of the big picture. In the study the SO is measured with the help of eight statements. The Descriptive Analysis (mean score, standard deviation, skewness, and kurtosis) is estimated and reported in table:

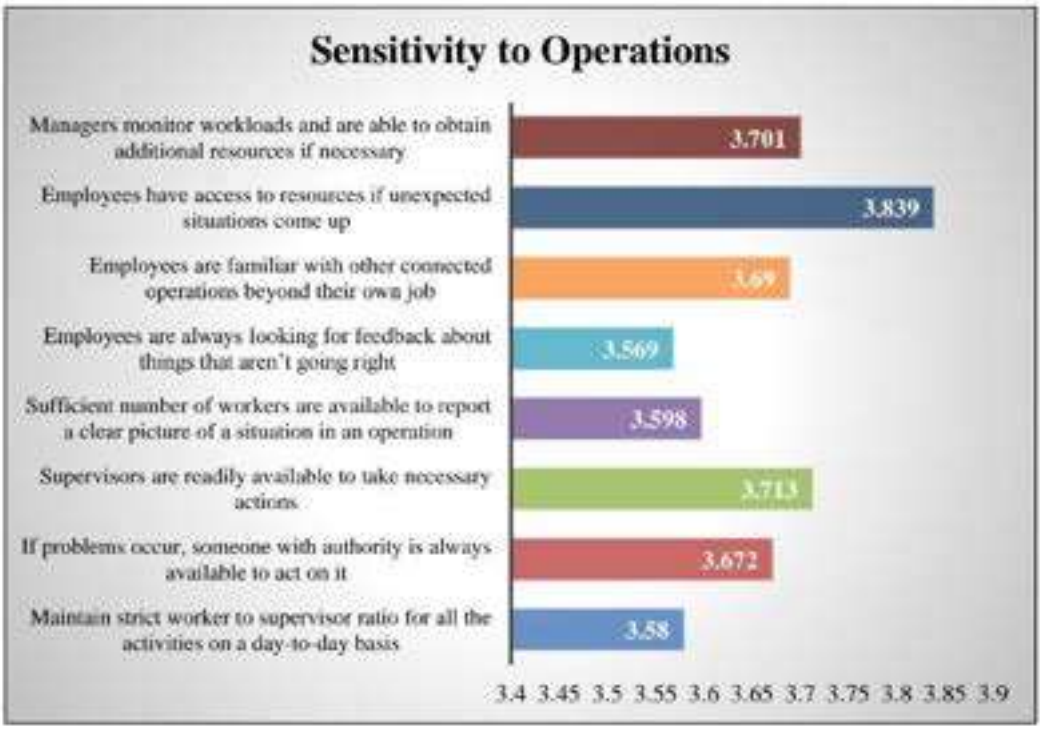
Table 4.12: *Descriptive Analysis- Sensitivity to Operations (SO)*

Name	Mean	Standard Deviation	Excess Kurtosis	Skewness
SO1- We maintain strict worker to supervisor ratio for all the activities on a day-to-day basis	3.58	1.062	-0.198	-0.517
SO2- If problems occur, someone with authority is always available to act on it	3.672	0.978	-0.181	-0.418
SO3- Supervisors are readily available to take necessary actions	3.713	1.038	0.293	-0.767
SO4- During an average day, sufficient number of workers are available to report a clear picture of a situation in an operation	3.598	1.017	0.007	-0.55
SO5- Employees are always looking for feedback about things that aren't going right	3.569	0.943	0.329	-0.533
SO6- Employees are familiar with other connected operations beyond their own job	3.69	1.009	-0.099	-0.563
SO7- Employees have access to resources if unexpected situations come up	3.839	0.914	0.382	-0.675
SO8- Managers monitor workloads and are able to obtain additional resources if necessary	3.701	1.057	-0.015	-0.702

Source: Analysis of primary data collected

The result of the Descriptive Analysis indicates that the mean score of all the statements is close to 4 in the scale of 1 to 5. The result indicates that the most of the respondents were found agree with statements indicating the SO. The respondents were found to highly agree that they are have access to resources if unexpected situations come up (mean score = 3.839).

Employees also found agree that Supervisors are readily available to take necessary actions (mean score = 3.713). Also, Employees agree that managers monitor workloads and are able to obtain additional resources if necessary (mean score =3.701). The employees were agreeing that Employees are familiar with other connected operations beyond their own job (mean score=3.69) If problems occur, someone with authority is always available to act on it (mean score=3.672). Employees also agree that during an average day, sufficient number of workers are available to report a clear picture of a situation in an operation (mean score =3.598). The employees found to maintain strict worker to supervisor ratio for all the activities on a day-to-day basis (mean score = 3.58). Also, it was found that employees are always looking for feedback about things that aren't going right (mean score =3.569). The standard deviations of the responses indicate the presence of variations in the responses. The skewness and kurtosis of the responses are found to be less than 1 indicating that the distributions of the responses are near to the normal distribution. The mean score of the responses against the different statements is shown below:



Source: Author's compilation from primary data

Figure 4.3: *Relation with Sensitivity to Operations (SO)*

Factor 3: Concern for Correcting Errors (CE)

CE, is a belief that decisions should be made by those with the greatest relevant expertise, regardless of their hierarchical position (Morgeson & Hofmann, 1999). It is a belief that relevant expertise lies somewhere in the organisation and can be applied to specific problems, if needed. Everyone listens to those who have the most knowledge of the task at hand; they are empowered to make decisions and quickly mitigate harm. These individuals may not have the most seniority, but they are encouraged to voice their concerns regardless of hierarchy (Roberts et al., 1994). In HROs, CE is evident particularly in times of trouble, when the pace of operations changes and employees are faced with novel situations. At these times, ultimate decision-making power is given to employees with the most expertise (Leroy et al., 2013). During normal periods of operation, however, traditional lines of authority are followed. In HROs, hierarchy is loosened to capitalize on the variety of expertise. Temporarily loosened hierarch (during off-normal events) allows a wider variety of people with different capabilities to positively react to the problem (Ruedy & Schweitzer, 2010).

Table 4.13: *Descriptive Analysis- Concern for Correcting Errors (CE)*

Name	Mean	Standard Deviation	Excess Kurtosis	Skewness
CE1-We focus more on non-occurrences of failures more than the occurrence of success of events	3.925	1.083	0.409	-1.001
CE2- We treat near misses and errors as information about the health of our operations and try to learn from them	3.897	1.023	-0.698	-0.472
CE3- We update our procedures after experiencing a close call or near miss to incorporate our new experiences and understanding	3.649	0.981	-0.41	-0.351
CE4- Hiding mistakes by employees is difficult in our system of working	3.776	1.029	-0.064	-0.655
CE5- Employees are inclined to report mistakes that have significant consequences even if nobody notices	3.799	1.109	-0.05	-0.767
CE6- Managers seek out and encourage people to report wrong practices	3.885	0.952	0.107	-0.654
CE7- Employees are rewarded for detection of errors in system	3.523	1.049	-0.332	-0.453

Source: Analysis of primary data collected

The result of the Descriptive Analysis indicates that the mean score of all the statements is close to 4 in the scale of 1 to 5. The result indicates that the most of the respondents were found agree with statements indicating the (CE). The respondents were found to highly agree that they focus more on non-occurrences of failures more than the occurrence of success of events (mean score = 3.925). Employees also found agree that they treat near misses and errors as information about the health of our operations and try to learn from them (mean score = 3.897). Employees found highly agree that Managers seek out and encourage people to report wrong practices (mean score =3.885). The employees were also highly agreeing that they are inclined to report mistakes that have significant consequences even if nobody notices (mean score=3.799). Also, they agree that hiding mistakes by employees is difficult in their system of working (mean score=3.776). Employees also agree that they update procedures after experiencing a close call or near miss to incorporate our new experiences and understanding (mean score =3.649). The standard deviations of the responses indicate the presence of variations in the responses. The skewness and kurtosis of the responses are found to be less than 1 indicating that the distributions of the responses are near to the normal distribution. The mean score of the responses against the different statements is shown below:

Source: Author's compilation from primary data

Figure 4.4: *Relation with Concern for Correcting Errors (CE)*

Factor 4: Commitment to Restore the System or Resilience (CTR)

CTR is a belief that all errors and mistakes cannot be prevented. It is the belief that once errors and mistakes occur, employees must quickly address and contain them to minimize their escalating consequences (van Dyck et al., 2005). Everyone works quickly to contain errors that do occur to minimize potential harm (Hargadon & Bechky, 2006). Errors do not disable the organisation; rather, the organisation responds robustly and looks for new solutions to prevent catastrophes. In HROs, CTR is evident in a few practices and procedures, such as the formation of temporary problem-solving teams, training that exposes employees to new problems and acceptance of improvisational actions that fall in line with organisational goals (Ray et al., 2011). HROs both believe and doubt experience simultaneously. These beliefs and doubts can lead to adaptive actions in situation where HROs encounter danger.

Table 4.14: *Descriptive Analysis- Commitment to Restore the System or Resilience (CTR)*

Name	Mean	Standard Deviation	Excess Kurtosis	Skewness
CTR1- We give more attention to improvement of present situation rather than waiting for incident to happen in future	3.81	0.937	0.388	-0.796
CTR2- Employees are given appropriate training on work they do	3.799	0.864	0.627	-0.783
CTR3- Development of employees' skill is given importance	3.701	1.03	-0.567	-0.584
CTR4- Challenging assignments are encouraged	3.874	1.065	0.675	-0.984
CTR5- Employees are encouraged for innovations	3.736	0.976	-0.471	-0.419
CTR6- Building employee's competence and response performances are given importance	3.73	1.001	-0.035	-0.545
CTR7- Employees are encouraged to rework on the failed project and forward solution	3.707	1.012	-0.044	-0.628

Source: Analysis of primary data collected

The result of the Descriptive Analysis indicates that the mean score of all the statements is close to 4 in the scale of 1 to 5. The result indicates that the most of the respondents were found agree with statements indicating the (CTR). The respondents were found to highly

agree that challenging assignments are encouraged in the organisation (mean score = 3.874). Employees also found agree that they give more attention to improvement of present situation rather than waiting for incident to happen in future (mean score = 3.81). Employees found highly agree that they are given appropriate training on work they do (mean score =3.799). Also, Employees are encouraged for innovations (mean score=3.736). Employees also agree that Building employee's competence and response performances are given importance (mean score =3.73). The employees were also agreeing that they are encouraged to rework on the failed project and forward solution (mean score=3.707). The standard deviations of the responses indicate the presence of variations in the responses. The skewness and kurtosis of the responses are found to be less than 1 indicating that the distributions of the responses are near to the normal distribution. The mean score of the responses against the different statements is shown below:

Source: Author's compilation from primary data

Figure 4.5: *Relation with Commitment to Restore the System or Resilience (CTR)*

F5: Pre-occupation with Failure rather than Success (SAFETY)

The relation with SAFETY is the belief that everyone in the organisation is focused on errors and near misses to learn from them and figure out how to prevent their recurrence (Rerup, 2009). People have a sense of SAFETY and finding and fixing problems is everyone's responsibility (LaPorte & Consolini, 1991). Leaders support and encourage

this approach. At times, it is hard to find the potential errors inside the current system. Avoiding attention to these errors or failures increase the likelihood of future failure. Errors and failures are both, highly likely and potentially dangerous. Also the feeling of complacency amongst employees is risky. In order to counter complacency, employees must continually and carefully monitor operations for even the smallest of errors or mistakes (Hales et al., 2012). In HROs, SAFETY is manifest in a number of practices and procedures, such as rewarding employees for reporting errors. Employees in HROs scrutinize any situation in which an error almost occurred and frequently evaluate the efficacy of standard operating procedure (Hoy et al., 2006).

Table 4.15: *Descriptive Analysis- Pre-occupation with Failure rather than Success (SAFETY)*

Name	Mean	Standard Deviation	Excess Kurtosis	Skewness
SAFTY1- Employees have a sense of safety	3.994	0.98	0.693	-0.987
SAFTY2- Every employee feels accountable for the safety culture in the organisation	3.914	1.016	0.583	-0.919
SAFTY3- Top Management pays as much attention to manage unexpected events as formal organisational goals	3.833	0.941	-0.296	-0.453
SAFTY4- Employees are very much aware of the processes that could affect safety	3.948	0.936	0.671	-0.913
SAFTY5- We spend time identifying the activities that could become hazardous to employees and customers	3.966	1.005	0.135	-0.855
SAFTY6- Top Management pays attention to the needs and wants of the employees, customers or other interested parties	3.983	0.98	0.499	-0.89

Source: Analysis of primary data collected

The result of the Descriptive Analysis indicates that the mean score of all the statements is close to 4 in the scale of 1 to 5. The result indicates that the most of the respondents were found agree with statements indicating the relation with (SAFETY). The respondents were found to highly agree that employees have a sense of safety in the organisation (mean score = 3.994). Employees also found agree that Top Management pays attention to the needs and wants of the employees, customers or other interested parties (mean score =3.983). Employees found highly agree that they spend time

identifying the activities that could become hazardous to employees and customers (mean score =3.966). Also, Employees are very much aware of the processes that could affect safety (mean score=3.948). Employees also agree that every employee feels accountable for the safely culture in the organisation (mean score =3.914). The employees were also agreeing that Top Management pays as much attention to manage unexpected events as formal organisational goals (mean score=3.833). The standard deviations of the responses indicate the presence of variations in the responses. The skewness and kurtosis of the responses are found to be less than 1 indicating that the distributions of the responses are near to the normal distribution. The mean score of the responses against the different statements is shown below:

Source: Author's compilation from primary data

Figure 4.6: *Relation with Pre-occupation with Failure rather than Success (SAFETY)*

The presence of these five organisational processes are the precursors of Mindfulness in employees and lead to **Collective Mindfulness of the organisation**. Which then leads to an enhanced organisational ability to detect and manage unexpected events. It is this ability that ultimately leads to enhance organisational reliability and becoming HRO. These five characteristics are essential to the development of an HRO. The connection between the five processes and Collective Mindfulness can be tested indirectly. The connections between the processes and Collective Mindfulness, suggest human resources

practices and mechanisms to develop the processes that lead to Mindfulness and enhance Reliability of the organisations.

4.3.7 Reliability and Validity Analysis

The internal consistency reliability of the included constructs in the measurement scale indicating the different dimensions of organisation Mindfulness is estimated with the help of Cronbach alpha. The minimum required value of the Cronbach alpha for all the different dimensions of organisation Mindfulness is greater than 0.70 (Hair et al., 2022). The internal consistency reliability indicates the significant and meaningful relationship between the different items measuring the construct. The result of the Cronbach alpha is reported in the table. The result reported that the estimated value of Cronbach alpha of each dimension of organisation Mindfulness is found greater than 0.70 (Sarstedt et al., 2017) (Concern for Correcting Errors = 0.881, Commitment to restore the system or Resilience =0.866, Paying serious attention to apparently simple threats coming up in the system = 0.902, Pre-occupation with failure rather than success =0.890, Sensitivity to Operations=0.916). **Thus, it can be concluded that, the responses received against the dimensions of Organisation Mindfulness in selected organisations are reliable with respect to internal consistency reliability.**

4.3.8 Convergent Validity

The convergent validity of a measurement scale indicates the extent to which the items used to measure the construct represents it and correlated with other items measuring the same construct. The convergent validity of the measurement scale indicating the different dimensions of organisation Mindfulness is measured with the help of outer loadings of the different items included in the questionnaire, composite reliability and average variance extracted of all the dimensions of organisation Mindfulness. In order to satisfy the conditions of convergent validity, the outer loadings of majority of the statements included in the questionnaire measuring the different dimensions of organisation Mindfulness should be greater than 0.70, the composite reliability of each dimension of organisation Mindfulness should be greater than 0.70 and Average Variance Extracted (AVE) of each dimension should be greater than 0.50. The result of convergent validity

of the measurement scale measuring the different dimensions of organisation Mindfulness are reported in the table. The result reported that the outer loadings of all the items measuring the different dimensions of organisation Mindfulness are greater than 0.70, the composite reliability of each dimension of organisation Mindfulness is found greater than 0.70 and AVE is greater than 0.50 (Saari et al., 2021; Hair et al., 2022). The value for Concern for Correcting Errors: CR = 0.908, AVE = 0.588, Commitment to restore the system or Resilience: CR=0.900, AVE= 0. 572, Paying serious attention to apparently simple threats coming up in the system: CR=0.922, AVE=0.571, Pre-occupation with failure rather than success: CR=0.917, AVE=0.651, Sensitivity to Operations: CR=0.932, AVE=0.632 are all well within the prescribed limits. **Thus, it can be concluded that the conditions of Convergent Validity for the measurement scale measuring the different dimensions of organisation Mindfulness are fulfilled. In some constructs, the values are from 0.60 to 0.70 range, which is considered as acceptable if the AVE of 0.50 is achieved (Saari et al., 2021; Hair et al., 2022).**

Table 4.16 (a): *Indicator Reliability of Constructs*

Constructs	Factor Loadings	VIF
ERRORS1 <- Correcting Errors	0.665	1.718
ERRORS2 <- Correcting Errors	0.791	2.135
ERRORS3 <- Correcting Errors	0.734	1.927
ERRORS4 <- Correcting Errors	0.850	2.663
ERRORS5 <- Correcting Errors	0.804	2.543
ERRORS6 <- Correcting Errors	0.858	2.975
ERRORS7 <- Correcting Errors	0.639	1.535
FAIL1 <- Failure	0.829	2.457
FAIL2 <- Failure	0.837	2.973
FAIL3 <- Failure	0.823	2.551
FAIL4 <- Failure	0.867	2.895
FAIL5 <- Failure	0.839	2.494
FAIL6 <- Failure	0.618	1.272
REL1 <- Reliability	0.887	2.332
REL2 <- Reliability	0.872	2.987
REL3 <- Reliability	0.860	2.159

Constructs	Factor Loadings	VIF
REL4 <- Reliability	0.878	2.018
REL5 <- Reliability	0.902	1.867
REL6 <- Reliability	0.616	1.334
RES1 <- Resilience	0.806	2.999
RES2 <- Resilience	0.864	2.581
RES3 <- Resilience	0.883	2.935
RES4 <- Resilience	0.900	4.640
RES5 <- Resilience	0.704	1.593
RES6 <- Resilience	0.680	1.750
RES7 <- Resilience	0.652	1.725
SIMPLY1 <- Simplify Interpretations	0.647	1.453
SIMPLY2 <- Simplify Interpretations	0.824	2.038
SIMPLY3 <- Simplify Interpretations	0.842	2.378
SIMPLY4 <- Simplify Interpretations	0.846	2.552
SIMPLY5 <- Simplify Interpretations	0.828	2.664
SIMPLY6 <- Simplify Interpretations	0.838	2.162
SIMPLY7 <- Simplify Interpretations	0.655	3.582
SIMPLY8 <- Simplify Interpretations	0.645	3.395
SIMPLY9 <- Simplify Interpretations	0.616	2.330
SO1 <- Sensitivity to Operations	0.734	3.552
SO2 <- Sensitivity to Operations	0.727	3.315
SO3 <- Sensitivity to Operations	0.731	3.498
SO4 <- Sensitivity to Operations	0.810	2.571
SO5 <- Sensitivity to Operations	0.838	2.983
SO6 <- Sensitivity to Operations	0.847	2.588
SO7 <- Sensitivity to Operations	0.825	2.596
SO8 <- Sensitivity to Operations	0.837	2.472

Source: Analysis of primary data collected

Table 4.16 (b): *Reliability and Validity of Construct*

Reliability and Validity	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
Concern for Correcting Errors	0.881	0.896	0.908	0.588
Pre-occupation with Failure	0.890	0.890	0.917	0.651
Reliability of Organisation	0.914	0.920	0.935	0.708
Commitment to restore the Systems or Resilience	0.866	0.894	0.900	0.572
Sensitivity to Operations	0.916	0.919	0.932	0.632
Simplify Interpretations	0.902	0.906	0.922	0.571

Source: Analysis of primary data collected

4.3.9 Discriminant Validity

The discriminant validity of the measurement scale indicates the all the latent variables included in the scale are conceptually different from each other and perceived differently by the respondents. The discriminant validity of the measurement scale measuring the different dimensions of organisation Mindfulness is examined with the help of HTMT ratio as well as Fornell Larcker Criteria. The results of the discriminant validity are reported in tables given below.

Table 4.17: *HTMT Ratio for Discriminant Validity*

HTMT Ratio	Concern for Correcting Errors	Pre-occupation with Failure rather than Success	Reliability	Commitment to Restore the System or Resilience	Sensitivity to Operations
Pre-occupation with failure rather than success	0.553				
Reliability	0.617	0.648			
Commitment to restore the system or Resilience	0.428	0.511	0.666		
Sensitivity to Operations	0.723	0.829	0.747	0.575	
Simplify Interpretations	0.895	0.650	0.740	0.652	0.792

Source: Analysis of primary data collected

The results reported in the table indicating the HTMT ratio for discriminant validity indicates that all the values of HTMT ratio are found less than 0.85 (Henseler, et al., 2015; Franke and Sarstedt, 2019), thereby indicating the presence of discriminant validity. Similarly, the Fornell Larcker criteria indicates the square root of the AVE for each construct is found greater than its correlations with remaining constructs (Fornell and Larcker, 1981). Thus the conditions of discriminant validity for the measurement scale measuring the different dimensions of organisation Mindfulness are fulfilled.

Table 4.18: *Fornell & Larcker Criteria for Discriminant Validity*

Fornell & Larcker's Criterion	Concern for Correcting Errors	Pre-occupation with Failure rather than Success	Reliability	Commitment to Restore the System or Resilience	Sensitivity to Operations	Simplify Interpretations
Correcting Errors	**0.767**					
Failure	0.503	**0.807**				
Reliability	0.559	0.598	**0.842**			
Resilience	0.366	0.450	0.591	**0.756**		
Sensitivity to Operations	0.659	0.750	0.684	0.497	**0.795**	
Simplify Interpretations	0.615	0.598	0.671	0.555	0.722	**0.755**

Source: Analysis of primary data collected

The Discriminant Validity is also examined with the help of cross loadings of items contained in their respective constructs. These items' correlation values are high with their constructs in comparison to other constructs in the model (Hair et al., 2019). To prove that discriminant validity is established at indicator level, the cross loadings are seen as a best measure as represented in Table 4.19(a):

Table 4.19(a): *Cross Loadings for Discriminant Validity at Indicator Level*

Cross Loadings	Concern for Correcting Errors	Pre-occupation with failure rather than Success	Reliability	Commitment to restore the System or Resilience	Simplify Interpretations	Sensitivity to Operations
ERRORS1	**0.665**	0.589	0.321	0.157	0.478	0.458
ERRORS2	**0.791**	0.426	0.466	0.293	0.638	0.558
ERRORS3	**0.734**	0.372	0.378	0.245	0.544	0.432
ERRORS4	**0.850**	0.381	0.462	0.332	0.677	0.535
ERRORS5	**0.804**	0.398	0.438	0.312	0.691	0.539
ERRORS6	**0.858**	0.449	0.532	0.321	0.777	0.615
ERRORS7	**0.639**	0.299	0.361	0.248	0.505	0.357
FAIL1	0.355	**0.829**	0.476	0.351	0.372	0.550
FAIL2	0.332	**0.837**	0.408	0.274	0.416	0.591
FAIL3	0.363	**0.823**	0.395	0.319	0.418	0.540
FAIL4	0.391	**0.867**	0.502	0.386	0.490	0.636
FAIL5	0.391	**0.839**	0.475	0.372	0.499	0.609
FAIL6	0.531	**0.618**	0.560	0.419	0.615	0.638
REL1	0.499	0.522	**0.887**	0.562	0.588	0.582
REL2	0.451	0.465	**0.872**	0.577	0.578	0.556
REL3	0.445	0.532	**0.860**	0.428	0.519	0.597
REL4	0.517	0.546	**0.878**	0.438	0.611	0.620
REL5	0.502	0.573	**0.902**	0.462	0.599	0.637
REL6	0.398	0.360	**0.616**	0.518	0.477	0.440
RES1	0.224	0.293	0.423	**0.806**	0.333	0.324
RES2	0.303	0.398	0.518	**0.864**	0.454	0.399
RES3	0.334	0.392	0.505	**0.883**	0.476	0.424

Cross Loadings	Concern for Correcting Errors	Pre-occupation with failure rather than Success	Reliability	Commitment to restore the System or Resilience	Simplify Interpretations	Sensitivity to Operations
RES4	0.298	0.369	0.534	**0.900**	0.470	0.394
RES5	0.216	0.339	0.457	**0.704**	0.386	0.383
RES6	0.260	0.310	0.322	**0.510**	0.412	0.335
RES7	0.334	0.322	0.305	**0.513**	0.436	0.394
SIMPLY1	0.522	0.541	0.522	0.362	**0.647**	0.621
SIMPLY2	0.782	0.466	0.504	0.352	**0.824**	0.582
SIMPLY3	0.771	0.499	0.527	0.311	**0.842**	0.627
SIMPLY4	0.789	0.490	0.534	0.401	**0.846**	0.591
SIMPLY5	0.753	0.473	0.528	0.329	**0.828**	0.571
SIMPLY6	0.745	0.434	0.508	0.383	**0.838**	0.548
SIMPLY7	0.388	0.398	0.510	0.608	**0.655**	0.462
SIMPLY8	0.367	0.359	0.491	0.567	**0.645**	0.442
SIMPLY9	0.326	0.366	0.400	0.478	**0.616**	0.412
SO1	0.421	0.686	0.488	0.397	0.531	**0.734**
SO2	0.453	0.694	0.501	0.401	0.541	**0.727**
SO3	0.414	0.694	0.505	0.455	0.526	**0.731**
SO4	0.513	0.587	0.555	0.414	0.537	**0.810**
SO5	0.397	0.569	0.587	0.371	0.608	**0.838**
SO6	0.559	0.548	0.568	0.385	0.585	**0.847**
SO7	0.616	0.532	0.554	0.365	0.632	**0.825**
SO8	0.591	0.509	0.580	0.387	0.625	**0.837**

Source: Analysis of primary data collected

The inner Variance Inflation Factor (VIF) are further reported in Table 4.19(b) to check any multi-collinearity issues in the model. The base assumption of regression in cross-sectional is that there must not be any multi-collinearity issues in the inner model (Hair et al., 2022). The result of the inner VIF indicates that all the values are less than 5, thus, indicating the absence of any high correlations.

Table 4.19(b): *Inner VIF Criteria for Multi-Collinearity Checks*

	Multi-Collinearity Checks
Commitment to restore the system (Resilience)	1.570
Concern for Correcting Errors	3.235
Pre-occupation with failure rather than success	2.357
Reluctance to Simplify Interpretations	4.297
Sensitivity to operations	3.288

Source: Analysis of primary data collected

After establishing the lower order dimensions of Mindfulness and validating their reliabilities and validities with the aspect of organisation. The first order measurement model assessments were duly performed and represented from Table 15 to 18. The second order measurement model assessments were performed for the construct of Mindfulness to validate the same in order to check the impact if organisational Mindfulness with the organisational reliabilities. The factor loadings for the construct of organisational Mindfulness to investigate indicator level reliability is represented in Table 4.20:

Table 4.20: *Factor Loadings for the Construct of Organisational Mindfulness*

Mindfulness	**Factor Loadings**
Simplify Interpretations	0.901
Sensitivity to Operations	0.891
Correcting Errors	0.811
Failure	0.805
Resilience	0.694

Source: Analysis of primary data collected

All factor loadings were well above the threshold values of 0.708 as prescribed by Hair et al (2022). Further, the aspect of reliability and validity at the construct level is mentioned in Table 4.21.

Table 4.21: *Reliability and Validity of Construct*

	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
Organisational Mindfulness	0.879	0.886	0.913	0.679
Reliability	0.914	0.921	0.935	0.708

Source: Analysis of primary data collected

The discriminant validity of higher order construct of organisational Mindfulness was then assessed with HTMT criterion and Fornell and Larcker's criterion as represented in Table 4.22(a) and Table 4.22(b).

Table 4.22(a): *HTMT Correlations*

HTMT Correlations	Mindfulness
Reliability	**0.846**

Source: Analysis of primary data collected

The value of HTMT correlation was well below than the threshold value of 0.850 (Henseler, et al., 2015). Further the discriminant validity was established with the square root of the AVE of organisational Mindfulness which was observed higher than the correlation value of organisational reliability as mentioned in Table 4.22(b).

Table 4.22(b): *Square Root of AVE*

Fornell and Larcker's Criterion	Mindfulness	Reliability
Mindfulness	**0.824**	
Reliability	0.757	**0.842**

Source: Analysis of primary data collected

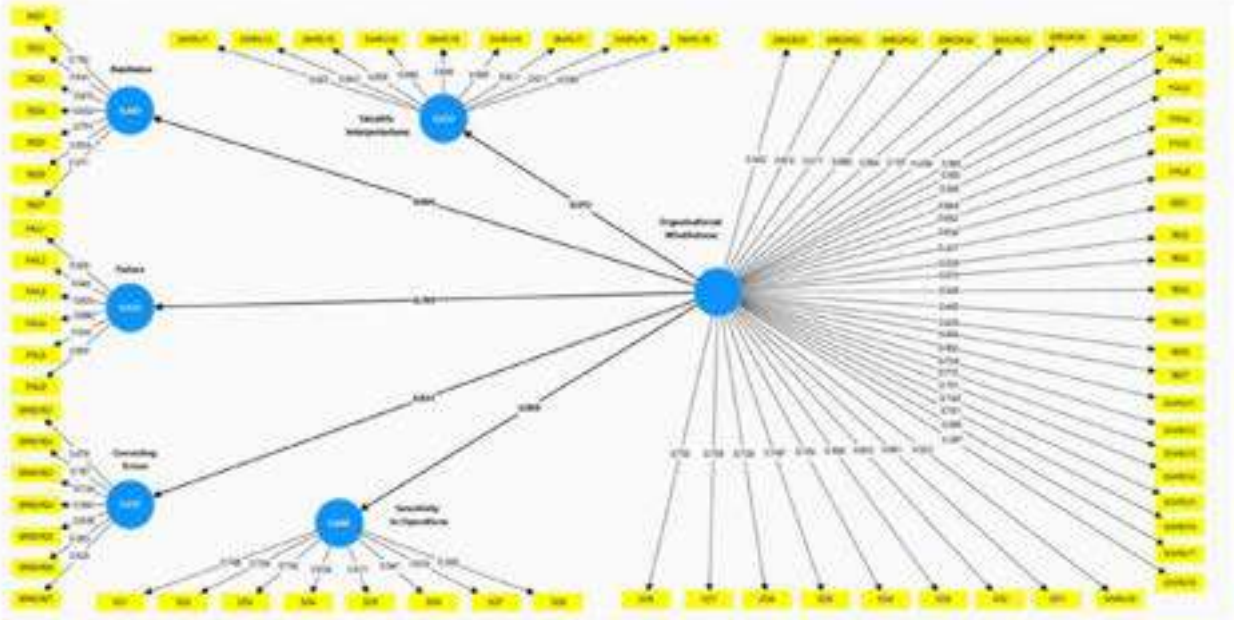
Lastly the cross loadings were assessed to check the discriminant validity at indicator level as mentioned in Table 4.23:

Table 4.23: *Discriminant Validity at Indicator Level*

Cross Loadings	Organisational Mindfulness	Organisational Reliability
Correcting Errors	**0.811**	0.559
Failure	**0.805**	0.599
Resilience	**0.694**	0.589
Sensitivity to Operations	**0.891**	0.684
Simplify Interpretations	**0.901**	0.671
REL1	0.671	**0.886**
REL2	0.641	**0.871**
REL3	0.616	**0.861**
REL4	0.668	**0.88**
REL5	0.677	**0.904**
REL6	0.533	**0.613**

Source: Analysis of primary data collected

Thereafter the second order construct of organisational Mindfulness was assessed in Figure 4.7.



Source: Author's compilation from primary data using SmartPLS 4.0

Figure 4.7: *Second Order Construct of Organisational Mindfulness*

4.4 Objective 3: To establish the Relationship between Mindfulness and Reliability

In the study the structural model is developed in order to study the relationship between the five factors of Mindfulness on the overall reliability of the organisation. The five selected factors measuring the organisation Mindfulness are namely *CE, CTR, RSE, SAFETY and SO.* All these factors are zero order constructs and reflective in nature. These factors are assumed to influence the overall reliability of the organisation. The Overall reliability of the organisation is assumed to be endogenous constructs. The SEM analysis is done to examine the influence of selected factors on the overall reliability of the organisations with **10,000 bootstrap sub-samples** (Hair et al., 2019, 2022). The following hypotheses are examined:

H1: 'Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE)' significantly influences the overall reliability of the organisation.

H2: 'Commitment to Restore the System or Resilience (CTR) significantly influences the overall reliability of the organisation.

H3: 'Pre-occupation with Failure rather than Success (SAFETY)' significantly influences the overall reliability of the organisation.

H4: 'Concern for Correcting Errors (CE)' significantly influences the overall reliability of the organisation.

H5: 'Sensitivity to Operations (SO)' significantly influences the overall reliability of the organisation.

H6: Organisational Mindfulness significantly influences overall reliability of the organisation.

The results of variance based PLS-SEM were well investigated by hypotheses testing in Table 4.23:

Table 4.24: *Hypotheses Testing using SEM*

Hypotheses	Hypotheses Testing	Standardized Beta (O)	Sample Mean (M)	Standard Deviation (STDEV)	T statistics (|O/STDEV|)	P values	2.50%	97.50%
H1	Reluctant to Simplify Explanation -> Organisational Reliability	0.221	0.224	0.071	3.112**	0.006	0.065	0.380
H2	Commitment to Resilience -> Organisational Reliability	0.262	0.261	0.057	4.607***	0.000	0.151	0.373
H3	Preoccupation with Failure -> Organisational Reliability	0.119	0.119	0.052	2.288**	0.035	0.075	0.245
H4	Concern for Correcting Errors -> Organisational Reliability	0.140	0.159	0.059	2.694**	0.023	0.085	0.255
H5	Sensitivity to Operations -> Organisational Reliability	0.278	0.279	0.070	3.973***	0.000	0.140	0.412
H6	Mindfulness -> Reliability	0.757	0.758	0.023	32.364***	0.000	0.706	0.799

Source: Analysis of primary data collected

H1: Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE) Significantly Influences the overall Reliability of the Organisation

Conclusions: The results of the SEM analysis supported the hypothesis that **"(RSE) significantly influences the overall reliability of the firm"** (path coefficient= 0.221, t stats= 3.112**). The path coefficient indicating the impact of on overall reliability is found to be positive and significant. The value of standardised beta was found well within the confidence intervals of 95 percent in order to support H1 hypothesis.

H2: Commitment to Restore the System (CTR) Significantly Influences the Overall Reliability of the Organisation

Conclusions: The results of the SEM analysis supported the hypothesis that **"CTR significantly influences the overall Reliability of the firm"** (path coefficient= 0.262, t stats= 4.607***). The path coefficient indicating the impact of CTR on overall reliability is found to be positive and significant. Thus, it can be concluded that CTR significantly enhances the overall reliability in the organisations in order to support H2 hypothesis.

H3: Pre-occupation with Failure rather than Success (SAFETY) Significantly Influences the Overall Reliability of the Organisation

Conclusions: The results of the SEM analysis supported the hypothesis that **"(SAFETY) significantly influences the overall reliability of the firm"** (path coefficient= 0.119, t stats= 2.288**). The path coefficient indicating the impact of preoccupation with failure on overall reliability is found to be positive and significant. Thus, it can be concluded that (SAFETY) significantly enhances the overall reliability in the organisations in order to support H3 hypothesis.

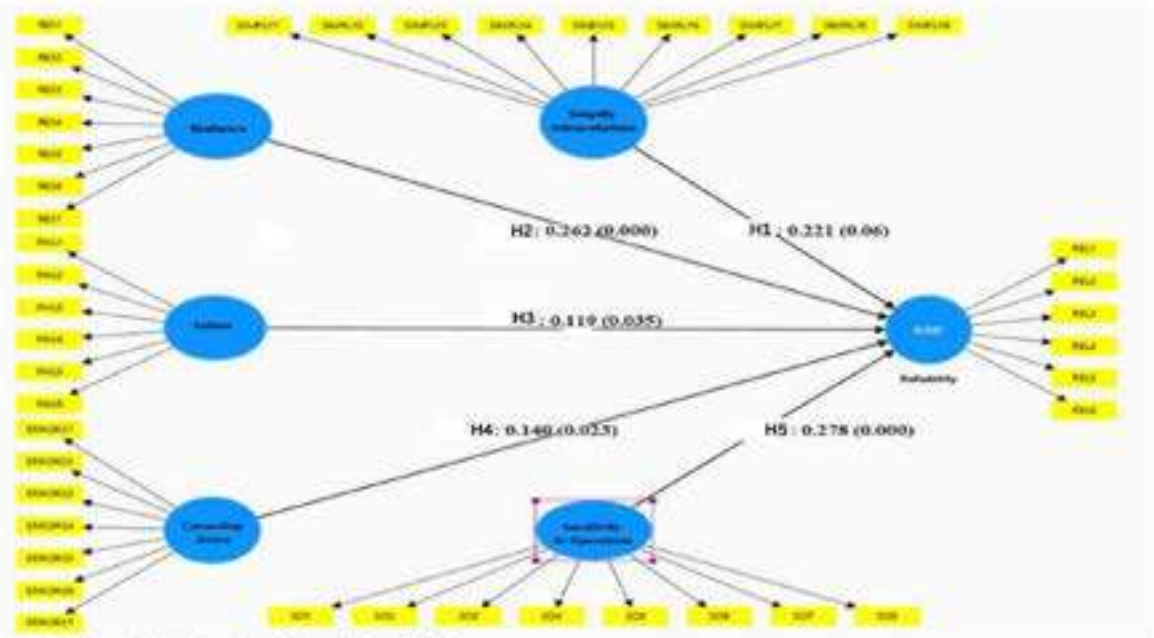
H4: Concern for Correcting Errors (CE) Significantly Influences the Overall Reliability of the Organisation

Conclusions: The results of the SEM analysis supported the hypothesis that **"CE" significantly influences the overall reliability of the firm"** (path coefficient= 0.140, t stats= 2.694**). The path coefficient indicating the impact of CE on overall reliability is found to be positive and significant. Thus, it can be concluded that CE significantly enhances the overall reliability in the organisations to support the hypothesis H4.

H5: Sensitivity to Operations (SO) Significantly Influences the Overall Reliability of the Organisation

Conclusions: The results of the SEM analysis supported the hypothesis that **"SO significantly influences the overall reliability of the firm"** (path coefficient= 0.278, t stats= 3.973***). The path coefficient indicating the impact of SO on overall reliability is found to be positive and significant. Thus, it can be concluded that SO significantly enhances the overall reliability in the organisations to support H5.

The hypotheses testing for all lower order dimensions are well represented in Figure 4.8:

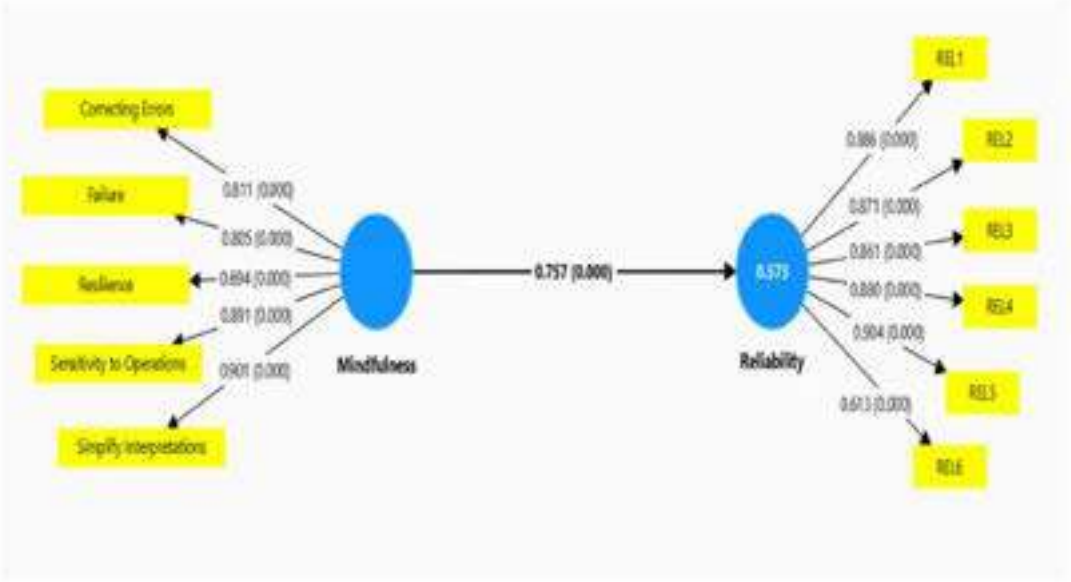


Source: Author's compilation from primary data using SmartPLS 4.0

Figure 4.8: *Structural Model Assessments for Lower Order Dimensions of Mindfulness and Reliability*

H6: Organisational Mindfulness Significantly Influences Overall Reliability of the Organisation

Finally, the SEM assessments were performed for checking the impact of Mindfulness and organisational reliability in the present study. In this regard, H6: Mindfulness significantly influences overall reliability of the organisation was investigated and reported in Table 4.23. The results revealed that organisational Mindfulness positivity influences the overall reliability as the path coefficient= 0.757, t stats= 3.973*** were significant at 1 percent level. The pictorial representation of significant results and the real impact was shown in Figure 4.9:



Source: Author's compilation from primary data

Figure 4.9: *Structural Model Assessments for Mindfulness and Reliability*

The overall R-square of reliability was observed as 58.7 percent by all lower order dimensions of Mindfulness to determine the variance explained. However, the overall co-efficient of determination for the aspect of reliability was found to be 57.3 percent.

The next aspect of SEM was the value of f-square values of all independent variables in the study. The R-square values are adjusted to check the model complexity by investigating the variance explained in the endogenous constructs by the exogenous constructs (Hair et al, 2019, 2022). The formulae to calculate Cohen's f^2 is mentioned as below:

$$\textbf{Cohen's } f^2 = (R^2_{included} - R^2_{excluded})/(1 - R^2_{included})$$

The basic rule of thumb for measuring effect sizes by Cohen's f^2 is as below:

- $0.02 \leq f^2 \leq 0.15$: Weak Effect
- $0.15 \leq f^2 \leq 0.35$: Moderate Effect
- $f^2 \geq 0.35$: Strong Effect

In the present study, all values of f-squares were assessed to have a low effect on determination of organisational reliability. Thus, the future researchers must try to include more dimensions of reliabilities, in terms of mediators or moderators to see any change in the overall variance. The values of f-square are represented in Table 4.25.

Table 4.25: *F-square Values*

F-square	Organisational Reliability	Results
Commitment to Resilience -> Organisational Reliability	0.072	Low
Concern for Correcting Errors -> Organisational Reliability	0.009	Low
Preoccupation with Failure -> Organisational Reliability	0.043	Low
Reluctant to Simplify Explanation -> Organisational Reliability	0.009	Low
Sensitivity to Operations -> Organisational Reliability	0.034	Low

Source: Analysis of primary data collected

The predictive relevance of organisational reliability was assessed by PLS-Predict procedure to investigate the errors obtained in the six statements of the construct of reliability. The six errors were obtained by running the theorized model and then by running an un-theorized model. The difference in the theory based errors and non-theory based errors were investigated and analysed in Table 4.26.

Table 4.26: *PLS-Predict Procedure*

Reliability	Q^2predict	PLS-SEM_RMSE	LM_RMSE	PLS - LM	Results
REL1	0.431	0.919	0.930	-0.011	**Moderate to High Predictive Relevance**
REL2	0.394	0.954	1.018	-0.064	
REL3	**0.384**	**0.954**	**0.952**	**0.002**	
REL4	0.442	0.794	0.850	-0.056	
REL5	0.451	0.798	0.834	-0.036	
REL6	**0.275**	**1.094**	**1.088**	**0.006**	

Source: Analysis of primary data collected

The results revealed that the value of Q^2predict was well above the threshold value of zero. The results represent that there exist some predictive relevance and generalizability of the results of reliability in other context also. Then the errors of PLS-SEM were compared with LM (Linear Model) values to understand that there is moderate to high level of predictive relevance in the present study (Danks and Ray, 2018). Out of six statements, the success rate was found for four statements, thus in statement number 3 and 6, the predictive relevance was low. We have compared the Root Mean Square Errors (RMSE) as residuals to compare because the histogram of all residuals were found to be symmetrically distributed in a normal distribution curve. All these histograms for six statements of reliability as shown in Figure 4.10(a) to 4.10(f).

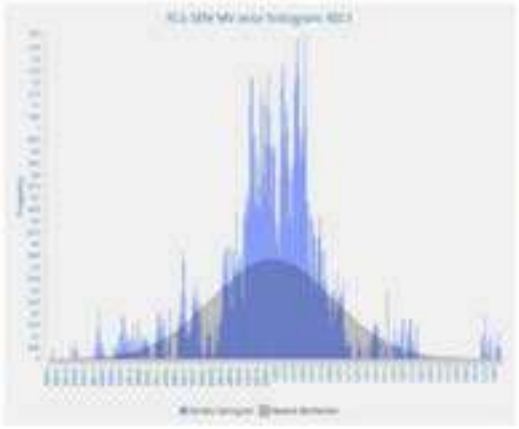


Figure 4.10 (a): *Reliability-1*

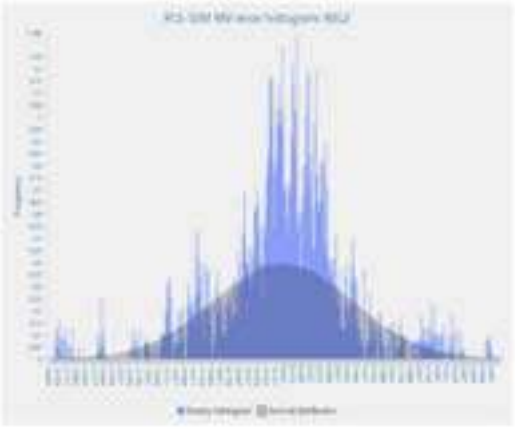


Figure 4.10 (b): *Reliability-2*

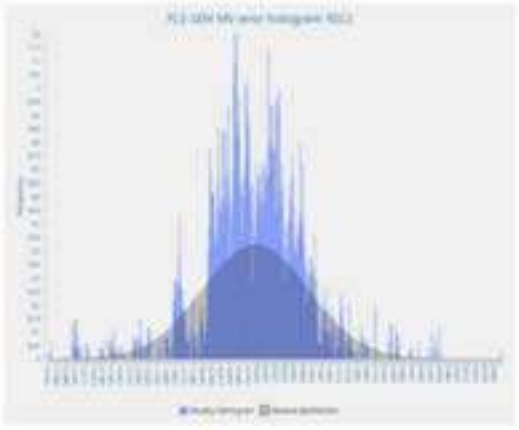


Figure 4.11 (a): *Reliability-3*

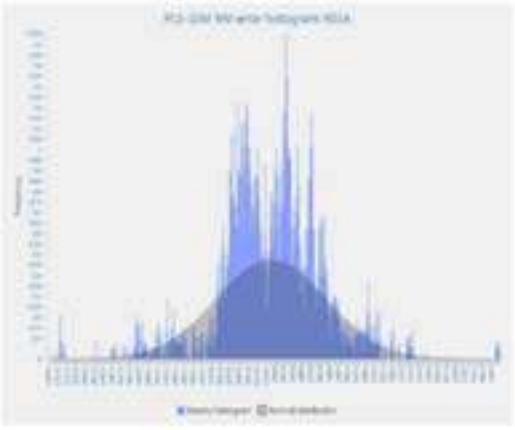


Figure 4.11 (b): *Reliability-4*

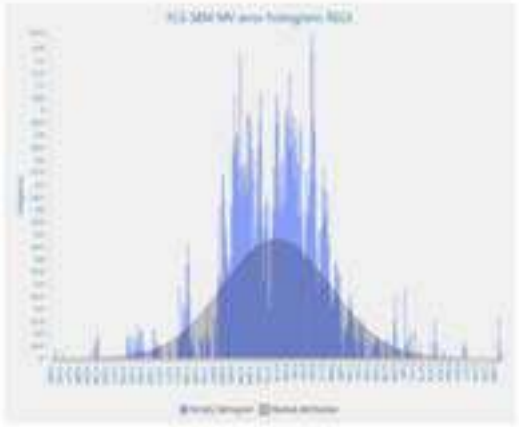


Figure 4.12 (a): *Reliability-5*

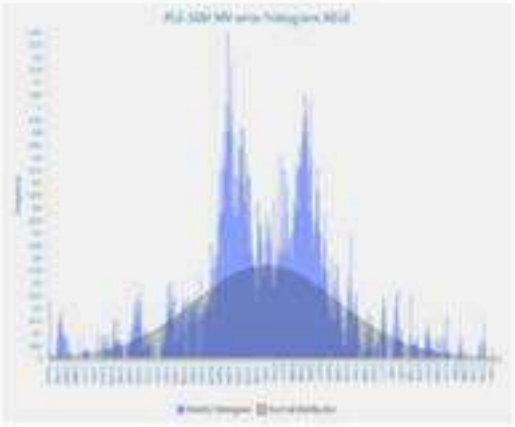


Figure 4.12 (b): *Reliability-6*

Source: Author's compilation from primary data

4.4.1 Model Fit Indices

Lastly, the model fit indices were investigated in the model of reliability influenced by Mindfulness. The maximum tolerance limits for the badness of model is represented by Standardised Root Mean Residual (SRMR) values which are considered to be 0.08 (8 percent) (Hair et al., 2022). In our present study, the maximum SRMR value was found to be 0.075 (means 7.5 percent) (Hu and Bentler, 1999). Thus, the overall goodness of fit indices was found to be 92.5 percent level. The estimated and saturated values are both below the maximum bad level of 8 percent. The normative fit indices were above the prescribed level of 0.90. The other indices of geodesic distance and unweighted least square methods are also between the tolerance levels to indicate the goodness of model of this study as represented in Table 4.27.

Table 4.27: *Model Fit Indices*

Model Fit Indices	Saturated Model	Estimated Model
SRMR	0.075	0.075
d_ULS	14.322	14.322
d_G	5.224	5.224
Chi-square	13893.874	13893.874
NFI	0.916	0.916

Source: Author's compilation from primary data

In addition to model fit indices and other parameters of PLS-SEM, we have applied Importance-Performance Map Analysis (IPMA) to check which independent variable is

important and which independent variable is performing to influence the overall reliability of the organisations selected in this study (Ringle and Sarstedt, 2016). The results are assessed and reported in Table 4.28.

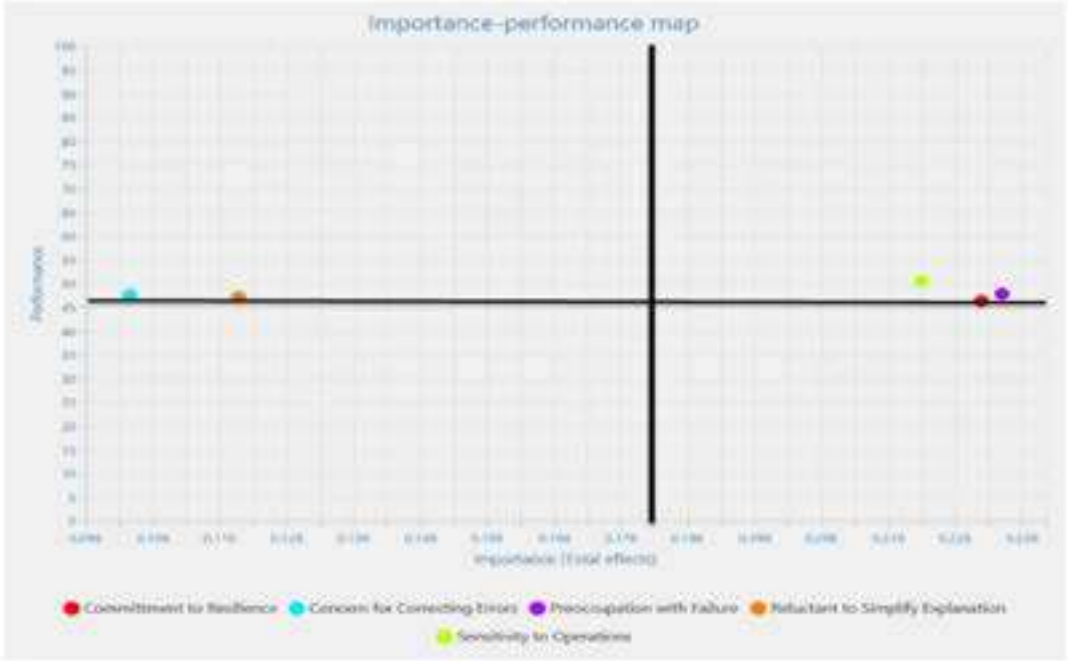
Table 4.28: *Importance-Performance Indices*

Constructs under study	Importance Indices	Performance Indices
Commitment to Resilience	0.230	46.275
Concern for Correcting Errors	0.103	47.602
Preoccupation with Failure	0.233	47.782
Reluctant to Simplify Explanation	0.119	47.153
Sensitivity to Operations	0.221	50.478
Averages	**0.181**	**47.858**

Source: Author's compilation from primary data

The results revealed that pre-occupation with failure was considered as the first and foremost an important aspect to influence the reliability in the organisations. The next aspects are commitment to resilience followed by sensitivity to operations. The most performing independent variable was sensitivity to operations to affect resilience followed by pre-occupation with failure. The four quadrants of IPMA is also calculated and thus represented in Figure 4.13.

The quadrant clearly represents the fact that pre-occupation with failure, commitment to resilience and sensitivity of operations are important and performing independent variables. However, concern for correcting errors and simplify explanations are not important but performing constructs to drive reliability. Thus, these are considered as cash cows in the select organisations under study, however the remaining constructs are considered as star variables.



Source: Author's compilation from primary data

Figure 4.13: *Importance-Performance Matrix*

4.5 Objective 4

Describe these Selected Indian Organisation as HROs using Mindfulness Indicators

The five selected factors measuring the organisation mindfulness are, Pre-occupation with failure rather than success (SAFETY), Paying serious attention to apparently simple threats coming up in the system (RSE), Commitment to restore the system or Resilience (CTR), Concern for Correcting Errors (CE) and Sensitivity to Operations (SO). The Descriptive Analysis of all the selected factors is discussed below:

- **Pre-occupation with Failure Rather than Success (SAFETY)**

The result of the Descriptive Analysis of safety measure for the selected organisations is shown below. The result indicates that the **SAFETY** is found to be highest in DGQA followed by IAF. The NPCIL score for the safety is found to be lowest among all the selected organisations. The ANOVA test is applied to find out the difference if any, among the selected organisations. The result of ANOVA test does not indicate any significant different among the selected organisations with respect to the safety score. Thus, it can be concluded that all the selected organisations maintain high safety standards. The F-statistics of 0.964 was way below than the tabular value of 4 and the p-value was 42.9 percent which was above the threshold value of 5 percent. However, we can infer from the mean scores that DGQA

seems to consider safety as critical measure to evaluate overall reliability in the organisations.

Table 4.29: *Pre-occupation with Failure Rather than Success (SAFETY) - One-way ANOVA*

		N	Mean	Std. Deviation	F Ratio (p value)
(SAFETY) Scores	NPCIL	93	3.8333	.64624	0.964 (.429)
	HAL	105	3.9333	.94212	
	DGQA	108	4.1765	.65384	
	ARMY	111	3.9213	.76686	
	IAF	121	4.0427	.79538	

Source: Analysis of primary data collected

Source: Author's compilation from primary data

Figure 4.14: *Pre-occupation with Failure Rather than Success (SAFETY) in Selected Indian Organisations*

➢ Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE)

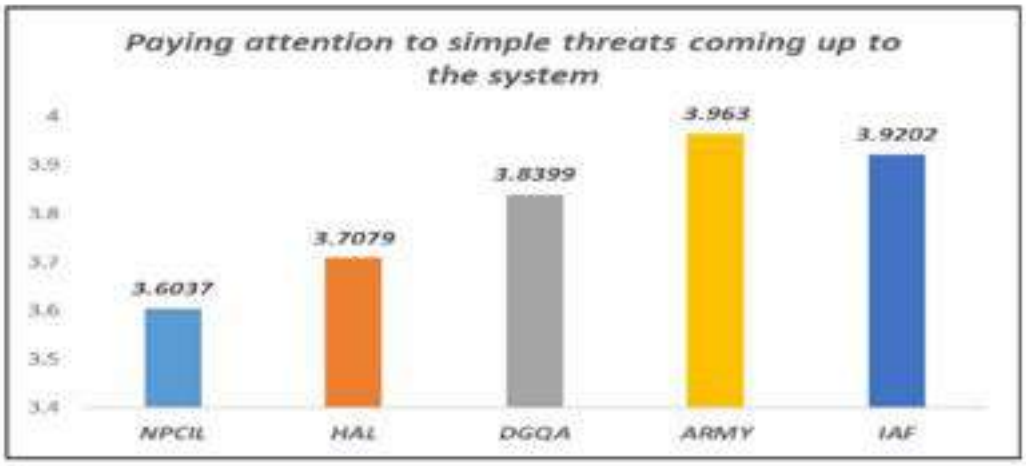
The result of the Descriptive Analysis for **RSE** measure for the selected organisations is shown below. The result indicates that the **RSE** is found to be highest in Indian ARMY followed by IAF. The NPCIL score for the **RSE** system is found to be lowest among all the selected organisations. The ANOVA test is applied to find out the difference if any, among the selected organisations. The result of ANOVA test does not indicate any significant difference among the selected organisations with respect to **RSE)** score. Thus, it can be concluded that all the

selected organisations are same with respect to **RSE** and all organisations pay serious attentions to simple threats. However, on the basis of mean scores, it seems that ARMY considers this aspect more critically in their organisations.

Table 4.30: *Paying Serious Attention to Apparently Simple Threats Coming up in The System (RSE)- One-way ANOVA*

		N	Mean	Std. Deviation	F Ratio (p value)
Paying Serious Attention to Apparently Simple Threats Coming up in the System **(RSE)**	NPCIL	93	3.6037	.84955	1.236 (0.297)
	HAL	105	3.7079	.87035	
	DGQA	108	3.8399	.83962	
	ARMY	111	3.9630	.72302	
	IAF	121	3.9202	.59887	

Source: Analysis of primary data collected



Source: Author's compilation from primary data

Figure 4.15: *Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE) in Selected Indian Organisations*

➢ Commitment to Restore the System or Resilience (CTR)

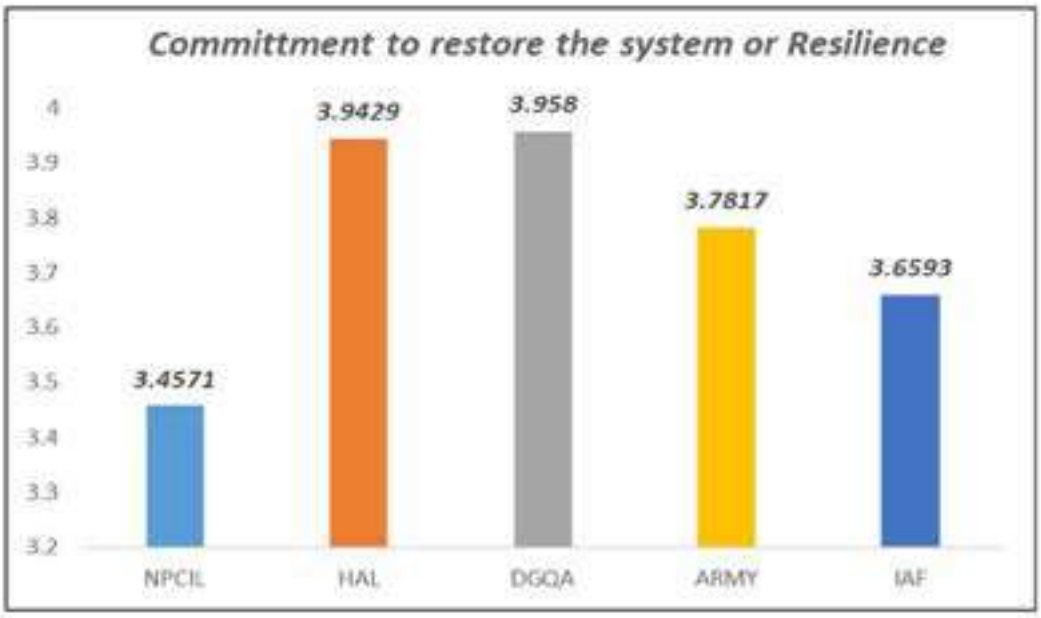
The result of the Descriptive Analysis for **CTR** measures for the selected organisations is shown below. The result indicates that the **CTR** is found to be highest in DGQA and HAL followed by Indian ARMY and IAF. The NPCIL score for the commitment to resilience is found to be lowest among all the selected organisations. The ANOVA test is applied to find out the difference if any, among the selected organisations. The result of ANOVA test does not indicate any significant different among the selected organisations with respect to

Commitment to resilience score. Thus, it can be concluded that all the selected organisations are same with respect to **CTR**.

Table 4.31: *Commitment to Restore the System or Resilience (CTR)– One-way ANOVA*

		N	Mean	Std. Deviation	F Ratio (p value)
Commitment to restore the system or Resilience (CTR)	NPCIL	93	3.4571	.85088	2.380 (.054)
	HAL	105	3.9429	.75926	
	DGQA	108	3.9580	.76853	
	ARMY	111	3.7817	.67222	
	IAF	121	3.6593	.80454	

Source: Analysis of primary data collected



Source: Author's compilation from primary data

Figure 4.16: *Commitment to Restore the System or Resilience (CTR) in Selected Indian Organisations*

➢ Concern for Correcting Errors (CE)

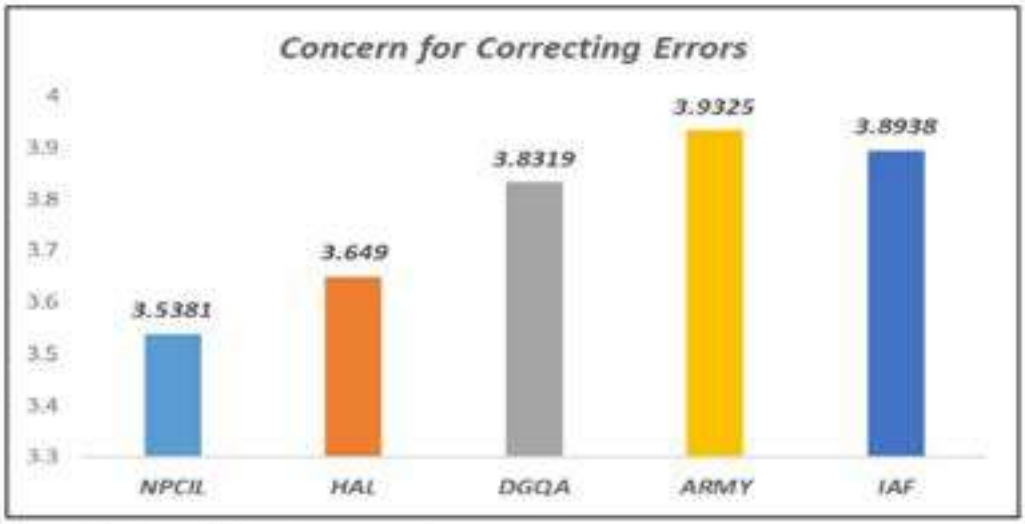
The result of the Descriptive Analysis for **CE** measure for the selected organisations is shown below. The result indicates that the **CE** is found to be highest in Indian ARMY, IAF and DGQA. The NPCIL score for the concern for correcting errors is found to be lowest among all the selected organisations. The ANOVA test is applied to find out the difference

if any, among the selected organisations. The result of ANOVA test does not indicate any significant difference among the selected organisations with respect to concern for correcting errors score. Thus, it can be concluded that all the selected organisations are same with respect to **CE.**

Table 4.32: *Concern for Correcting Errors (CE)- One-way ANOVA*

		N	Mean	Std. Deviation	F Ratio (p value)
Concern for Correcting Errors (CE)	NPCIL	93	3.5381	.86830	1.411 (0.232)
	HAL	105	3.6490	1.03559	
	DGQA	108	3.8319	.73978	
	ARMY	111	3.9325	.76626	
	IAF	121	3.8938	.66014	

Source: Analysis of primary data collected



Source: Author's compilation from primary data

Figure 4.17: *Concern for Correcting Errors (CE) in Selected Indian Organisations*

➢ **Sensitivity to Operations (SO)**

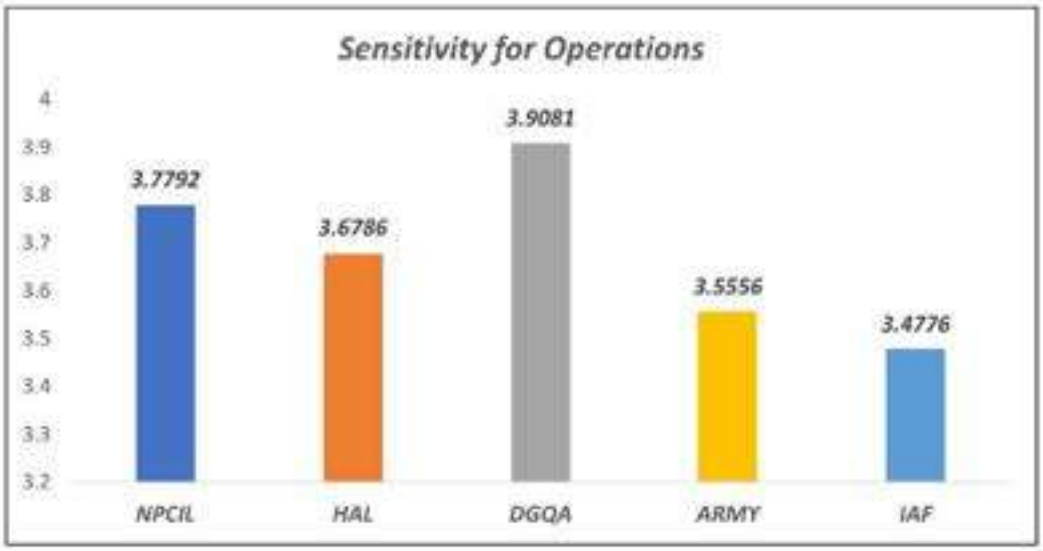
The result of the Descriptive Analysis for **SO** measure for the selected organisations is shown below. The result indicates that the **SO** is found to be highest in DGQA and NPCIL followed by HAL. The ARMY and IAF's NPCIL score for **SO** is found to be lowest among all the selected organisations. The ANOVA test is applied to find out the difference if any, among the selected organisations. The result of ANOVA test does not indicate any significant different among the selected organisations with respect to sensitivity to

operations. So, it can be concluded that all the selected organisations are same with respect to **SO.**

Table 4.33: *Sensitivity to Operations (SO) - One-way ANOVA*

		N	Mean	Std. Deviation	F Ratio (p value)
Sensitivity to Operations	NPCIL	93	3.7792	.50927	1.873 (0.117)
	HAL	105	3.6786	.82765	
	DGQA	108	3.9081	.68556	
	ARMY	111	3.5556	.90802	
	IAF	121	3.4776	.71857	

Source: Analysis of primary data collected



Source: Author's compilation from primary data

Figure 4.18: *Sensitivity to Operations (SO) in Selected Indian Organisations*

4.6 Summary

In this chapter, four main objectives of the study were pursued: -

- **Objective 1: Assessment of Selected Indian Organisations for Characteristics of an HRO**

Utilizing criteria established by Roberts and Rousseau (1989), characteristics of HRO were confirmed by employees of these select Indian organisations through a questionnaire, interviews, and personal interactions. It was found through employee feedback that **all the**

five selected organisations confirmed the characteristics of an HRO. DGCA and IAF scored highest as 'Absolute Reliable' and 'High Reliable' organisations, demonstrating significant association between organisation type and HRO characteristics.

- **Objective 2: Examining the Mindfulness Indicators in these Indian Organisations**

The study evaluates Mindfulness indicators across NPCIL, HAL, ARMY, IAF, and DGQA using EFA. EFA with PCA and Varimax rotation identifies five factors: RSE, SO, CE, CTR, and SAFETY. These factors collectively explain 66.77% of the variance, supported by high internal consistency (Cronbach's alpha > 0.70), convergent validity, and discriminant validity tests. Reliability and validity assessments (Cronbach's alpha, convergent validity, discriminant validity) confirm the robustness of the measurement model. The study establishes that organisational Mindfulness enhances an organisation's ability to detect and manage unexpected events. **Factor analysis identified five dimensions (RSE, SO, CE, CTR, SAFETY) that collectively explain 66.77% variance.**

- **Objective 3: Establishing the Relationship between Mindfulness and Organisational Reliability**

The study constructs a Structural Equation Modeling (SEM) to explore how the five factors of organisational Mindfulness influence organisational Reliability. SEM showed that organisational Mindfulness factors significantly influence organisational Reliability (R^2=58.7%), validated by PLS-SEM analysis with robust predictive relevance and model fit indices exceeding thresholds (SRMR = 0.075). Results indicate a **significant relationship between organisational Mindfulness and organisational Reliability**. Importance-Performance Map Analysis (IPMA) identifies 'Pre-occupation with failure' as the most critical factor influencing reliability, followed by 'Commitment to resilience' and 'Sensitivity to operations'.

- **Objective 4: Describing these Selected Indian organisation as HROs using Mindfulness Indicators (Comparative Analysis of Organisational Dimensions)**

Descriptive analysis and ANOVA tests compare organisational factors (SAFETY, RSE, CTR, CE, SO) across the selected organisations (DGQA, IAF, HAL, ARMY, NPCIL). Results show no significant differences among organisations in most factors, indicating uniformity in safety standards, attention to threats, resilience commitment, error correction concern, and sensitivity to operations across these institutions. These tests revealed

uniformity among selected organisations in Mindfulness dimensions, highlighting DGQA and IAF's leadership in SAFETY and Sensitivity to Operations (SO), respectively, while confirming statistical insignificance in differences.

Overall, the study accentuates the critical role of organisational Mindfulness in enhancing reliability, with specific dimensions such as Pre-occupation with Failure Rather than Success (SAFETY) and Sensitivity to Operations (SO) emerging as pivotal factors across diverse HROs in India. The study underscores the importance of organisational Mindfulness and HRO characteristics in enhancing reliability within complex and hazardous environments. It validates these constructs through rigorous statistical methods and provides insights into how these elements contribute to organisational effectiveness across different contexts within India. The findings suggest practical implications for fostering reliability and mindfulness in organisational settings, aiming to improve operational outcomes and readiness to manage unexpected challenges effectively.

Chapter 5

Findings and Conclusions

5.1 Overview

This chapter presents a concise overview of previous chapters. This study has examined the effect of Mindfulness on organisational Reliability. Mindfulness entailed developing a state of being fully aware and attentive to the present moment, without passing judgement (Hülsheger et al., 2013). This practice could have a beneficial effect on different areas of how an organisation operates (Good et al., 2016; Oeij et al., 2018). This study examined the impact of integrating Mindfulness techniques into the culture and practices of an organisation on improving reliability in many areas, such as operations, decision-making, and relationships with others. Mindfulness techniques might potentially reduce errors, promote consistency, and improve overall performance in businesses by promoting clarity, focus, and resilience (Carson et al., 2004; Tomlinson et al., 2018). The study explored how Mindfulness can enhance organisational Reliability and provided valuable perspectives into its practical implications for managers and leaders who aimed to establish more trustworthy and efficient businesses (Carlo et al., 2012; Linnenluecke et al., 2017).

5.2 Findings

Objective 1: Assessment of Selected Indian Organisations for Characteristics of an HRO

- According to Perrow (1979), High-reliability organisations (HROs) were entities that had the potential to function effectively amid intricate and perilous circumstances. These organisations exhibited eight specific traits: tight coupling, compressed time factors, hyper complexity, many key outcomes, severe hierarchical differentiation, huge decision-makers in complicated communication networks, high accountability, and regular feedback (Rochlin, 1996; Roberts, 1989; Roberts & Rousseau, 1989). The features mentioned were verified by employees of certain Indian organisations through the use of surveys, interviews, and personal contacts. The questionnaire results indicated that a significant number of employees, 44.8%, perceived their organisation

as an 'Absolute Reliable Organisation', while 42.4% considered it a 'High Reliable Organisation'.

- The Cross Tabulation test revealed that DGQA achieved the highest score of 52.9% in the category of 'Absolute Reliable Organisation', followed by IAF with a score of 46.2%. In the category of 'High Reliable Organisation', IAF obtained a score of 51.3%.
- The Chi-Square test indicated a strong correlation between type of organisations and categories of HROs, having a p-value below 5%. The Null hypothesis (Ho1) was rejected, which was supported by the direction measure testing (phi and Cramer's V test), where the p-value was below the 5% significance level. Therefore, the study successfully established a correlation between different types of organisations and categories of HROs.

Objective 2: Measurement of Mindfulness Indicators in Select Indian Organisations

- The study assessed Mindfulness markers in certain Indian enterprises by utilizing original data obtained through a survey. The questionnaire had thirty-seven statements rated on a 1 to 5 interval scale, along with selected demographic profiles. The dimensions of organisational Mindfulness were determined based on the analysis of current research. Principal Component Analysis (PCA) and "Varimax" orthogonal rotation were utilised to apply exploratory factor analysis (EFA). The value of the KMO was determined to be 0.906, surpassing the minimum threshold of 0.7, suggesting that the sample adequacy is satisfactory.
- The Bartlett test of spherical was employed to assess the statistical significance of the correlation between various pairs of assertions. The Chi-square calculated was 4396.139, with a p-value below the 5% level of significance. The results refuted the null hypothesis and suggested that the relationship matrix was not a matrix of identity. This implied a correlation between both dependent and independent variables. The factor loadings had values between -1 and +1, suggesting a considerable influence of factors on each variable in the study. The strong association between several assertions validated the findings, assisting in the identification of underlying components that measure organisational Mindfulness.
- The study used both, the EFA approach and the PCA method, to examine the collected responses. The Varimax method was employed to extract orthogonal elements that

were independent of each other. The research findings demonstrated that there were five distinct components that assess various aspects of organisational Mindfulness. These factors account for 66.77% of the variability in the responses. This suggested a strong alignment between the factor analysis and the data.

- The factor analysis showed a link between items and retrieved factors with the Rotated Eigen values of the extracted factors. The result demonstrated both discriminatory and convergent validity with strong factor loadings (>0.5). Factors not displaying significant factor loadings were eliminated. Five factors were isolated for subsequent analysis. The five factors that had been retrieved were named as:
  - Factor 1: Paying Serious Attention to Apparently Simple Threats Coming up in the System (RSE)
  - Factor 2: Sensitivity to Operations (SO)
  - Factor 3: Concern for Correcting Errors (CE)
  - Factor 4: Commitment to Restore the System or Resilience (CTR)
  - Factor 5: Pre-occupation with Failure Rather than Success (SAFETY)
- The Descriptive Analysis showed that the existence of five processes within an organisation, which included employee Mindfulness and collective Mindfulness, enhances an organisation's capacity to identify and handle unforeseen situations. The average score of these procedures was approximately 4 on a scale ranging from 1 to 5.
- The study employed Cronbach's alpha to assess the reliability of internal consistency of different domains of organisational Mindfulness. All dimensions had a minimum value larger than 0.70, which indicated a strong correlation between the items used to measure the construct. Each measure exhibited a Cronbach alpha value beyond 0.70, suggesting that responses related to these dimensions were reliably consistent within the chosen businesses.
- The validity of the assessment scale for organisational Mindfulness was assessed by the examination of outer loads, average variance extracted, and composite reliability. All dimensions had outer loadings exceeding 0.70, composite reliability exceeded 0.70, and Average Variance Extracted (AVE) exceeded 0.50. The values for CE, CTR, RSE, SAFETY, as well as SO, were all within the specified parameters. The scale's Convergent Validity requirements were met, with values within the acceptable range

of 0.60 to 0.70. It was necessary to attain an Average Variance Extracted (AVE) of 0.50.

- The Discriminant Validity of the measuring scale was evaluated by utilizing the HTMT ratio as well as the Fornell Larcker Criteria. The findings indicated that the HTMT ratio falls below 0.85, suggesting the presence of discriminant validity. The Fornell Larcker criteria demonstrated that the square root of the Average Variance Extracted (AVE) for each construct exceeded the correlations it had with other constructs. This indicated that the scale evaluating different dimensions of organisational Mindfulness satisfies the requirements for discriminant validity.
- The study conducted by (Hair et al., 2019) investigated the discriminant validity of items by comparing them to other constructs in the model. The analysis revealed that these items had a strong association with their respective constructs, compared to other constructs in the model.
- The inner Variance Inflation Factor (VIF) was used to assess the presence of multicollinearity in the model, as the cross-sectional regression assumption aimed to prevent such concerns. The findings of the inner VIF analysis indicated that all values were below 5, suggesting the absence of significant correlations.
- The lower-level aspects of Mindfulness were confirmed and their reliability and validity were demonstrated. Subsequently, the reliability of the subsequent order measurement framework was evaluated to examined the influence of organisational Mindfulness. All factor loadings exceeded the required value of 0.708.
- The discriminant validity of the higher-order construct of organisational Mindfulness was evaluated using the HTMT criteria and Fornell and Larcker's criteria. The correlation coefficient was less than the threshold of 0.850, while the square of the root of the average variance extracted (AVE) of organisational Mindfulness was more than the correlation coefficient of organisational reliability.

Objective 3: Establishing the Relationship between Mindfulness and Organisational Reliability by Structural Model Assessment

- This study investigated the correlation between five Mindfulness aspects and the overall dependability of a business. The five elements assessed were RSE, CE, SO, CTR, and SAFETY, which were primary constructs representing the organisation's

total reliability. The study used structural equation modeling (SEM) analysis using 10,000 bootstrap sub-samples. All the six hypotheses were investigated using variance-based partial least squares SEM (PLS-SEM). The results provided evidence in favour of all the six hypotheses, as indicated by a standardized beta value falling within the 95% confidence intervals, hence supporting all the six hypotheses. The organisation's overall reliability was considered to be an endogenous construct.

- The study discovered that Mindfulness had an average R-square of 58.7% and a coefficient of determining 57.3 percent. By applying the PLS-Predict approach to evaluate the predictive significance of company reliability, an amount of Q^2 predict was found that was much higher than zero. Additionally, the study compared the linear model values and PLS-SEM errors and showed medium to high predictive significance. limited success rates for four statements—statements 3 and 6 in particular—indicated limited predictive relevance. The symmetric distribution of the histogram of all residuals in a normal distribution curve allowed for the comparison of the Root Mean Square Errors (RMSE) as residuals.
- The study examined the model fit indicated in a reliability model that was affected by Mindfulness. The SRMR values represented the maximum acceptable level of badness, with the highest value being 0.075. The overall goodness of fit indicated was 92.5%, and both the estimated and saturated values are below the maximum acceptable level of 8%. The geodesic distance and unweighted least square methods additionally fall within the acceptable tolerance levels.
- The study employed Partial Least Squares-Structural Equation Modeling (PLS-SEM) and Importance-Performance Map Analysis (IPMA) to examine the impact of independent variables on organisational dependability. The findings indicated that the primary element influencing individuals was excessive concern about failure (SAFETY), which was followed by a strong dedication to resilience (CTR) and a keen awareness of operational details (RSE). The independent variable that had the greatest impact was Sensitivity to Operations (SO), which directly influenced Resilience (CTR). This was followed closely by the Preoccupation with Failure (SAFETY). This implied that by addressing these concerns, organisational reliability can be greatly enhanced.
- Each of the four quadrants of IPMA emphasized the significance of avoiding failure, building resilience, and maintaining operational sensitivity. The reliability of a system

was influenced by these independent variables, while several firms saw mistake correction and explanation simplification as highly profitable assets. The remaining structures were classified as star variables.

Objective 4: Describing these Selected Indian Organisations as HROs using Mindfulness Indicators

- The Descriptive analysis and ANOVA revealed that DGQA and IAF exhibit the greatest emphasis on 'SAFETY', with IAF being the second highest. The ANOVA test findings indicated that there was not a statistically significant distinction in SAFETY ratings among the selected firms. This suggested that all of the organisations maintain strong safety standards.
- The study revealed that the ARMY and IAF demonstrated a remarkable level of vigilance towards seemingly minor risks within their systems (RSE). Nevertheless, the ANOVA test failed to reveal any statistically significant variation among the chosen firms, suggesting that all organisations share the same level of concern over these concerns and all organisations prioritize these threats.
- The analysis revealed that DGQA and HAL demonstrated the greatest dedication to restoring the system and resilience (CTR), with the Indian ARMY and IAF following closely behind. The ANOVA test findings indicated that there was no statistically significant difference in the score among the selected firms. This suggested that all organisations have a comparable level of commitment to resilience.
- The study indicated that the DGQA, IAF, and ARMY, show the greatest attention for rectifying errors (CE), whereas NPCIL had the lowest score among all the institutions surveyed. The ANOVA test revealed no statistically significant difference in concern for rectifying error scores, suggesting that the selected organisations were similar.
- The analysis revealed that DGQA and NPCIL exhibit the highest level of sensitivity to operations (SO), with HAL following closely behind. The ARMY as well as IAF's rating had the lowest values. The ANOVA tests do not reveal any significant variations among the chosen firms. This suggested that all organisations exhibit comparable levels of sensitivity to operations.

5.3 Conclusions

Based on the extensive research conducted across multiple objectives concerning High-Reliability Organisations (HROs) and organisational mindfulness within selected Indian organisations, several key conclusions can be drawn:

Presence of HRO Characteristics in Selected Indian Organisations

The study effectively verified the presence of HRO characteristics, as defined by Perrow (1979), within the surveyed Indian organisations. Traits such as tight coupling, high accountability, and regular feedback were notably perceived by employees, with significant proportions rating their organisations as 'Absolute Reliable' or 'High Reliable' (Weick & Sutcliffe, 2011). Specific organisations like DGQA and IAF stood out with higher scores, indicating stronger alignment with HRO traits (Roberts & Rousseau, 1989). Statistical analyses confirmed a strong correlation between organisational types and HRO categories, reinforcing the validity of the HRO framework in diverse organisational contexts. Statistical analyses, including Chi-Square and Cross Tabulation tests, validated strong correlations between organisational types and HRO characteristics. Overall, the study effectively confirmed the presence of key HRO attributes like tight coupling, high accountability, and regular feedback in the surveyed Indian organisations, highlighting their applicability and relevance across diverse organisational contexts (Weick, et al. 1999).

Measurement of Mindfulness Indicators in Selected Indian Organisations

Organisational Mindfulness was comprehensively assessed using robust methodologies, including Principal Component Analysis (PCA) and Exploratory Factor Analysis (EFA). These analyses identified five distinct dimensions of organisational Mindfulness: RSE (Reluctance to Simplify Interpretations), SO (Sensitivity to Operations), CE (Commitment to Resilience), CTR (Cultural Transformation Readiness), and SAFETY. These dimensions collectively explained a significant portion of the variability in organisational practices" (Weick and Quinn, 1999).

Reliability and validity assessments, such as Cronbach's alpha (Bagozzi & Yi, 1988; Cronbach, 1951) for internal consistency, factor loadings for the strength of variable representation, and discriminant validity tests, demonstrated the robustness of the measurement scale (Malhotra et al., 2006). These assessments ensured that the identified

dimensions captured meaningful aspects of organisational mindfulness across diverse contexts (Hair, 2011).

Establishing the Relationship between Mindfulness and Organisational Reliability in Selected Indian Organisations

Structural equation modeling (SEM) highlighted a strong positive relationship between organisational mindfulness dimensions and overall organisational reliability. Findings supported hypotheses indicating that dimensions like sensitivity to operations (SO) and commitment to resilience (CTR) significantly influen ce organisational reliability (Malhotra & Dash, 2012).

Importance-Performance Map Analysis (IPMA) underscored the criticality of addressing failure concerns and enhancing operational sensitivity for improving overall organisational reliability (Hauff et al., 2024).

Describing Selected Indian Organisations as HROs using Mindfulness Indicators

Descriptive analyses and ANOVA tests revealed consistent mindfulness indicators across surveyed organisations, with notable strengths in areas such as safety management (SAFETY), sensitivity to operational risks (RSE), and commitment to resilience (CTR).

While specific organisations displayed variations in emphasis across these dimensions, overall statistical analyses indicated similarities in mindfulness practices, reinforcing shared priorities in enhancing organisational reliability.

In conclusion, the study provides compelling evidence that selected Indian organisations exhibit characteristics of High-Reliability Organisations and integrate organisational Mindfulness practices effectively. These findings not only validate theoretical frameworks but also underscore the practical relevance of these concepts in enhancing organisational resilience, operational effectiveness, and overall reliability amidst complex and challenging environments. Future research could further explore the longitudinal impact of mindfulness initiatives on sustained organisational performance and resilience across different sectors and organisational sizes within the Indian context.

Chapter 6

Limitations, Recommendations and Future Scopes of the Study

6.1 Limitations and Challenges

The study encountered several limitations and challenges:

- The use of random sampling in the sample design may have impacted the precision of results.
- The study included 538 respondents, but greater numbers could potentially enhance result accuracy.
- Due to the sensitive and restrictive nature of the selected organisations, data collection was constrained, limiting the depth of insights.
- Inherent biases in respondents' perspectives were unavoidable.
- Findings from the study may differ in contexts outside India or in environments with different cultural or socioeconomic factors.

6.2 Recommendations

Here are some practical recommendations for organisations to leverage Mindfulness to enhance reliability and organisational performance, indexed where possible:

➢ **Implement Mindfulness Training Program**

Design and implement customized Mindfulness training initiatives that incorporate meditation, stress-management techniques, and cognitive-behavioral exercises tailored to the organisation's specific needs and cultural context as emphasized by Rochlin et al. (1998), Weick & Roberts (1993), Roberts (1990) in studies of aircraft carriers, Roberts & Libuser (1993) in banking and Gaba (2000) in health care sector.

- **Promote Mindful Leadership Practices**

Encourage leaders to integrate Mindfulness into daily routines and decision-making processes, fostering traits like attentive listening, empathy, and clear communication to build trust and psychological safety (Kabat-Zinn, 2003).

- **Integrate Mindfulness into Organisational Policies and Practices**

Embed Mindfulness principles into policies, procedures, and performance management systems. For example, incorporate Mindfulness-based evaluations to assess dependability and ethical behavior, and provide incentives for demonstrating these qualities (Grossman, 2008).

- **Create a Mindful Work Environment**

Establish work environments that support Mindfulness and well-being, offering opportunities for breaks, meditation sessions, and open discussions about stress management and mental health (Langer, 1989).

- **Offer Ongoing Support and Resources**

Provide continuous support through tools like Mindfulness apps, online resources, and in-person sessions. Encourage peer support groups and mentorship to facilitate skill development in Mindfulness practices (Baer et al., 2006).

- **Foster Collaboration and Team Building**

Utilize Mindfulness-focused team-building activities to enhance cooperation, trust, and communication among team members. Foster an environment where open dialogue and constructive feedback are encouraged (Weick & Sutcliffe, 2007).

- **Evaluate and Monitor Impact**

Continuously assess the impact of Mindfulness programs on employee well-being, job satisfaction, and organisational outcomes. Use feedback and performance metrics to adjust interventions and ensure effectiveness over time (Schutte et al., 2007).

- **Cultivate Learning Culture**

Promote a culture of continuous learning and self-improvement through workshops, seminars, and ongoing education on Mindfulness. Encourage employees to explore and

customize Mindfulness techniques to fit their personal needs and preferences (Kabat-Zinn, 1994).

These recommendations aim to integrate Mindfulness into organisational strategies effectively, enhancing reliability, resilience, and overall performance.

6.3 Implications of the Study

This study has significant consequences for both the field of Mindfulness study as well as organisational Reliability management in Indian contexts. The findings contribute to the advancement of knowledge in the subject and offer practical suggestions for promoting more productive, more resilient, and efficient organisations in both the Indian setting and beyond. The study conducted on selected Indian organisations has delved into two critical aspects: High-Reliability Organisations (HROs) and organisational Mindfulness. It has utilised Perrow's (1979) framework to assess these organisations, revealing that a significant portion of employees viewed their workplaces as either 'Absolute Reliable' or 'High Reliable'. Notably, organisations like DGCA and IAF emerged as leaders in embodying these characteristics (Roberts & Rousseau ,1989). Through statistical analyses such as Chi-Square tests, the study established a clear correlation between organisational types and the manifestation of HRO traits (Rana & Singhal, 2015). These findings underscore how organisational structure influences the adoption and demonstration of reliability-enhancing traits in sensitive and complex environments (Perrow, 1979).

Furthermore, the study comprehensively examined organisational mindfulness using robust methodologies like factor analysis. It has identified five distinct dimensions of mindfulness: RSE, SO, CE, CTR, and SAFETY. Rigorous reliability and validity assessments affirmed the internal consistency and discriminant validity of the mindfulness measurement scale (Baer et al., 2006). These dimensions collectively highlight an organisation's capacity to detect and respond to unforeseen challenges, thereby enhancing its resilience and operational effectiveness (Conboy & Morgan, 2011; Leybourn, 2018).

The relationship between organisational mindfulness and reliability was further elucidated through structural equation modeling (SEM). The analysis revealed a strong

positive correlation between dimensions of mindfulness—such as RSE, CE, SO, CTR, SAFETY—and overall organisational reliability. This indicates that organisations prioritizing mindfulness practices are more likely to achieve higher levels of reliability and operational stability (Yu and Bruhn, 2018; Querstret et al., 2018; Good et al., 2016). Thus, fostering a culture of mindfulness emerges as a strategic imperative for organisations aiming to navigate complexities and uncertainties effectively (Schutte et al., 2007).

Comparative analyses among Indian organisations as HROs using mindfulness indicators has revealed both similarities and distinctions across sectors. While certain organisations excelled in specific mindfulness dimensions, such as sensitivity to operations or preoccupation with failure, most of the organisations demonstrated a collective commitment to maintaining high standards of operational resilience and safety. This collective effort suggests a uniformity in adopting mindfulness practices across different organisational contexts in India (Weick & Sutcliffe, 2007).

In conclusion, the study's implications reinforce the pivotal role of integrating HRO characteristics and mindfulness practices into organisational strategies and cultures. Such integration not only enhances organisational reliability and resilience but also fosters a proactive approach towards managing risks and uncertainties. Leadership and organisational structure play crucial roles in embedding these practices, thereby positioning organisations for sustained performance and strategic advantage in dynamic and challenging environments (Schein, 2010).

6.4 Future Research Direction

Future research related to this study could explore several key areas to deepen our understanding and application of mindfulness in organisational contexts:

- **Longitudinal Studies**

Conduct longitudinal studies to explore the sustained impact of mindfulness techniques on organisational reliability and outcomes (Sutcliffe et al., 2016). Track changes in mindfulness levels and reliability behaviors over time to understand long-term effects (Choi et al., 2020).

- **Mediating and Moderating Variables**

Investigate the influence of mindfulness on organisational reliability through factors such as organisational culture, leadership styles, work variables, and individual traits (Good et al., 2016). Understand how these factors can enhance the effectiveness of mindfulness programs (Krick & Felfe, 2020).

- **Cross-Cultural Comparisons**

Explore how mindfulness relates to reliability across different cultural settings within India, considering cultural values and organisational practices (Langer, 1989). This research can design culturally sensitive strategies for implementing mindfulness programs.

- **Intervention Strategies**

Design and evaluate innovative intervention strategies tailored to Indian organisations to promote mindfulness and reliability (Weick & Sutcliffe, 2007). Use mixed-methods approaches to assess program effectiveness across diverse employee groups.

- **Leadership and Organisational Dynamics**

Study how managerial behavior and organisational dynamics influence the adoption of mindfulness and reliability practices (Schein, 2010). Explore leadership roles in creating supportive environments for mindfulness and reliable behaviors (Cheung et al., 2020).

- **Impact on Specific Industries**

Analyse the applicability and impact of mindfulness interventions in specific sectors like healthcare, manufacturing, or transportation (Schutte et al., 2007). Assess how mindfulness practices affect reliability, safety, and performance outcomes in high-stakes environments in India.

- **Employee Well-being and Resilience**

Investigate how mindfulness programs enhance employee well-being, mitigate stress, and build resilience in Indian organisations facing occupational pressures. Explore the psychological benefits of mindfulness practices (Lomas et al., 2017; Vonderlin et al., 2020).

- **Ethical Decision-Making**

Explore the influence of mindfulness on ethical decision-making and integrity in Indian organisations (Baer et al., 2006). Study how mindfulness fosters ethical awareness and responsible conduct among employees and leaders.

These research areas can deepen our understanding of mindfulness's impact on organisational reliability and provide practical insights for enhancing workplace effectiveness in Indian contexts.

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Appendix A: Questionnaire

Assessment of "Mindfulness" as it Relates to Safety (SAFETY)

[For items 1– 6, please indicate how well each statement describes your organisation]

(1-Almost Never, 2-Very Infrequently, 3-Often, 4-Very frequently, 5-Almost Always)

In our organisation:

1.	Employees have a sense of safety	
2.	Every employee feels accountable for the safely culture in the organisation	
3.	Top Management pays as much attention to manage unexpected events as formal organisational goals	
4.	Employees are very much aware of the processes and procedures that could affect safety	
5.	We spend time identifying and removing the activities that could become hazardous to employees and customers	
6.	Top Management pays attention to the needs and wants of the employees	

Assessing the Extent of organisation's Concern for Correcting Errors (CE)

[For items 1 – 7, please indicate how well each statements describes your organisation]

(1-Almost Never, 2-Very Infrequently, 3-Often, 4-Very frequently, 5-Almost Always)

In our organisation:

1.	We focus more on non-occurrences of failures more than the occurrence of success of events	
2.	We treat near misses and errors as information about the health of our operations and try to learn from them	
3.	We update our procedures after experiencing a close call or near miss to incorporate our new experiences and understanding	
4.	Hiding mistakes by employees is difficult in our system of working	
5.	Employees are inclined to report mistakes that have significant consequences even if nobody notices	
6.	Managers seek out and encourage people to report wrong practices	
7.	Employees are rewarded for detection of errors in system	

Assessing Reluctance to Simplify Explanations (RSE)

For items 1 – 9, please indicate how well each statement describes your organisation

(1-Almost Never, 2-Very Infrequently, 3-Often, 4-Very frequently, 5-Almost Always)

In our organisation:

1.	Employees follow procedures and take nothing for granted	
2.	Questioning to the concerned person, who is involved in operation, is encouraged in the organisation	
3.	We are committed to bring continuous improvement	
4.	Employees feel free to bring up problems and tough issues in front of authorities	
5.	We carry out thorough analysis to better understand the nature of problems that come up	
6.	Employees are encouraged to express different views and opinions	
7.	We are encouraged to share information even if that could interrupt operations	
8.	When something unexpected happens, employees focus on listening and considering a complete analysis of the situation than advocating their views	
9.	We appreciate employees questioning the process and policies concerning with safe operations	

Assessing Sensitivity to Operations (SO)

For items 1 – 8, how well does each statements describe your organisation

(1-Almost Never, 2-Very Infrequently, 3-Often, 4-Very frequently, 5-Almost Always)

In our organisation:

1.	We maintain strict worker to supervisor ratio for all the activities on a day-to-day basis	
2.	If problems occur, someone with authority is always available to act on it	
3.	Supervisors are readily available to take necessary actions	
4.	During an average day, sufficient number of workers are available to report a clear picture of a situation in an operation	
5.	Employees are always looking for feedback about things that aren't going right	
6.	Employees are familiar with other connected operations beyond their own job	
7.	Employees have access to resources if unexpected situations come up	
8.	Managers monitor workloads and are able to obtain additional resources if necessary	

Assessing Commitment to Resilience (CTR)

For items 1 – 7, how well does each statements describe your organisation

(1-Almost Never, 2-Very Infrequently, 3-Often, 4-Very frequently, 5-Almost Always)

In our organisation:

1.	We give more attention to improvement of present situation rather than waiting for incident to happen in future	
2.	Employees are given appropriate training on work they do	
3.	Development of employees' skill is given importance	
4.	Challenging assignments are encouraged	
5.	Employees are encouraged for innovations	
6.	Building employee's competence and response performances are given importance	
7.	Employees are encouraged to rework on the failed project and forward solution	

Assessing Overall Reliability (OR)

For items 1 – 6, how well does each statements describe your organisation

(1-Almost never, 2-Very infrequently, 3-Often, 4-Very frequently, 5-Almost Always)

In our organisation:

1.	We treat all small and big failures as clues to systemic problems and investigate near misses for potential system weaknesses.	
2.	We recognise real-time problems to understand anomalies and accordingly solutions are made.	
3.	We maintain situational awareness in our organisation and speak up if something seems amiss	
4.	We device methods and Standard Operating Procedures to quick recovery from difficulty with keeping errors small in our organisation.	
5.	We maintain accountability of each workers (up, down, and sideways) in the organisation and the process	
6.	Our organisation has a culture of reliability and healthy safety climate with an end-to-end view of organisational sustainability.	

Assessment of High Reliable Organisation (HRO)

For items 1 – 8, please indicate how well does each statement describe your organisation

(Rate your organisation in the scale of 1-10, where 1= lowest score and 10= highest score)

	Statement	1	2	3	4	5	6	7	8	9	10
1.	My organisation is operating in highly complex environment										
2.	The outcome of one process is tightly linked with other processes in my organisation										
3.	Activities are strictly time bound in my organisation										
4.	Multiple processes which are critical in nature, occur simultaneously in my organisation										
5.	My organisation has strict hierarchical differentiation										
6.	Decisions are taken at multiple levels in my organisation										
7.	There is high level of accountability for all decision making authorities										
8.	In my organisation there is high frequency of immediate feedback for decisions mechanisms										
Total Score											

Appendix B: List of Publication

Journal Paper

S.No.	Title	Name of Author	Name of Journal/Conference	Indexing Status of Journal/Conference
1	Reliability Through Mindfulness in Indian Aircraft Maintenance Organisation: A Proposed Framework	Jitesh Bhardwaj, Prof Anu Singh Lather, and Dr Vikas Gupta	Int. J Public Sector Performance Management, Vol. 6, No. 5, 2020, ISSN:1741-1041 E-ISSN:1741-105X	Scopus indexed
2	Measuring Reliability of Indian High Reliable Organisation (HRO) through Mindfulness: A Sustainable Happiness Approach	Jitesh Bhardwaj, Prof Anu Singh Lather, and Dr Vikas Gupta	Education and Society, (UGC Care Journal), Vol- 46 Issue – 4, No.02, July – September.2023, ISSN:2278 - 6864	UGC Care indexed

Conferences

	Conferences	Date of Conferences	Place
1	International Conferences on Mindfulness Innovation, Digitization, Artificial Intelligence, Sustainability (MIDAS)	31 January and 01 Feb 2019	New Delhi
2	International Conferences On "Sustainable Development Goals Improving Human and Planetary Wellbeing. Research that Builds Our Future"	20 and 21 January 2023	New Delhi

Plagiarism Verification

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