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NAVIGATING EMPLOYEE RESISTANCE TO DIGITAL TECHNOLOGIES: UNDERSTANDING AND ADDRESSING ITS EMOTIONAL BASES

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DEDICATION

I dedicate this thesis to my parents.

For everything they have done to ensure I received the education I have today.

For their sacrifices that made this thesis possible.

Your unwavering support and belief in me have been the foundation of my journey.

You taught me the value of hard work, resilience, and dedication, and for that, I am forever grateful.

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ABSTRACT

This dissertation investigates the emotional foundations of employee resistance to technological changes, especially robotization in the workplace. Most research on resistance centers on cognitive interpretations and rational decision-making. Although emotions are acknowledged in the change context, strategies to address resistance overemphasize cognitive upskilling and training. This thesis underscores the need to recognize and understand employees' emotional reactions, advocating for their inclusion in strategies to mitigate resistance. Interpersonal emotion regulation (IER) emerges as a promising approach for managers to address and attenuate resistance by actively managing employees' negative emotions. Nevertheless, there is limited research on how leaders can employ IER to address employee resistance, creating a significant gap in both change resistance and IER literature.

This thesis investigates effective interpersonal emotion regulation (IER) strategies to address employee resistance within the context of robotization. The first study, a systematic review, explores resistance as reactions to perceived threats from digital technologies, identifying four resistance pathways with related emotions and behaviors. The second study, a qualitative case analysis of two companies undergoing robotization, examines IER's impact on mitigating resistance, emphasizing psychological safety as a crucial mediator between IER strategies and resistance. The third study, a quantitative experiment, evaluates perspective-taking as an IER technique, showing its potential to enhance psychological safety and reduce rejection of technological changes. Collectively, these studies investigate the role of emotions in resistance and assess the effectiveness of IER strategies in reducing opposition to digital transformation.

This dissertation contributes to the literature by offering new perspectives on the emotional aspects of resistance to technological adoption. By exploring the link between emotional reactions and resistance, it provides practical models that complement traditional cognitive approaches. The findings will benefit both researchers and professionals by enhancing understanding of employee responses to technological changes. This study bridges theory and practice, offering organizations actionable emotional management techniques to improve technology-driven change implementation. It is particularly beneficial for experts in technology management, human resources, and change management, refining scholarly views and organizational strategies for smoother technology adoption transitions.

KEYWORDS: emotions, emotion regulation, technology adoption, robotization, employee resistance

RESUMEN

Esta tesis aborda los fundamentos emocionales de la resistencia de los empleados a los cambios tecnológicos, especialmente a la robotización en el lugar de trabajo. La mayor parte de la investigación sobre la resistencia se centra en las interpretaciones cognitivas y la toma de decisiones racionales. Aunque se reconocen las emociones en el contexto del cambio, las estrategias para abordar la resistencia siguen centrándose en la formación cognitiva. Esta tesis subraya la necesidad de reconocer y comprender las reacciones emocionales de los empleados, abogando por su inclusión en las estrategias para mitigar la resistencia. La regulación interpersonal de las emociones (RIE) surge como un enfoque prometedor para que los directivos aborden y mitiguen la resistencia mediante la gestión activa de las emociones negativas de los empleados. Sin embargo, la investigación sobre cómo los líderes pueden emplear la IER para abordar la resistencia de los empleados es limitada, lo que crea una brecha significativa tanto en la literatura sobre la resistencia al cambio como en la IER.

Esta tesis investiga estrategias eficaces de regulación emocional interpersonal (IER) para abordar la resistencia de los empleados en el contexto de la robotización. El primer estudio, una revisión sistemática, explora la resistencia como reacciones a las amenazas percibidas de las tecnologías digitales, identificando cuatro vías de resistencia con emociones y comportamientos relacionados. El segundo estudio, un análisis de caso cualitativo de dos empresas en proceso de robotización, examina el impacto de la IER en la mitigación de la resistencia, haciendo hincapié en la seguridad psicológica como mediador crucial entre las estrategias de IER y la resistencia. El tercer estudio, un experimento cuantitativo, evalúa la toma de perspectiva como técnica de IER, mostrando su potencial para mejorar la seguridad psicológica y reducir el rechazo a los cambios tecnológicos. En conjunto, estos tres estudios empíricos investigan el papel de las emociones en la resistencia y evalúan la eficacia de las estrategias de IER para reducir la oposición a la transformación digital.

Esta tesis contribuye a la literatura ofreciendo nuevas perspectivas sobre los aspectos emocionales de la resistencia a la adopción tecnológica. Al explorar el vínculo entre las reacciones emocionales y la resistencia, proporciona modelos prácticos que complementan los enfoques cognitivos tradicionales. Los resultados beneficiarán tanto a los investigadores como a los profesionales al mejorar la comprensión de las respuestas de los empleados a los cambios tecnológicos. Este estudio tiende un puente entre la teoría y la práctica, ofreciendo a las organizaciones técnicas de gestión emocional aplicables para mejorar la implementación del cambio impulsado por la tecnología. Resulta especialmente beneficioso para los expertos en gestión de la tecnología, recursos humanos y gestión del cambio, ya que perfecciona los puntos de vista académicos y las estrategias organizativas para lograr transiciones de adopción de tecnología más fluidas.

Palabras Claves: emociones, regulación de las emociones, adopción de tecnología, robotización, resistencia de los empleados

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INTRODUCTION

I. Resistance to Digital Transformation

Digital transformation is an emerging phenomenon across industries, driven by the adoption of Industry 4.0 technologies (I4 technologies). These technologies, which include autonomous robots, system integration, the Internet of Things (IoT), simulation, additive manufacturing, cloud computing, augmented reality, big data, and cybersecurity, are revolutionizing manufacturing and industrial practices (Kaur et al., 2020). As a result, these technologies are shaping the future of industries, steering them into the era of Industry 4.0.

It is crucial to highlight that these innovations are not just transforming industrial practices; they are fundamentally reshaping how work is performed across various sectors. The shift from traditional operations to automated and interconnected systems has profound implications not only for the technology landscape but also for the workforce (Hanelt *et al*., 2021; Hofmann and Rüsch, 2017; Vial, 2019). This era of Industry 4.0 emphasizes automation, decentralization, and interconnectedness between humans and machines (Bharadwaj et al., 2013). I4 technologies create a digital infrastructure through cyber-physical systems that continually link humans and machines (Hanelt et al., 2021; Hofmann and Rüsch, 2017; Vial, 2019). Artificial intelligence and algorithms within these technologies differentiate them from traditional IT, with the potential to replace human roles (Hanelt et al., 2021; Pereira et al., 2023). This shift is likely to impact interpersonal relationships and limit job opportunities across industries.

Yet, as organizations introduce these transformative technologies, they face significant hurdles beyond the technical challenges—namely, the human response to these changes. One of the most critical issues is employee resistance, as many workers feel threatened by the implications of automation and AI on their roles. A major issue is employee resistance, as many may feel threatened by automation and AI. Addressing this resistance is critical, with a high percentage of digital transformation failures linked to it (Oludapo et al., 2024). Resistance can be active or passive, ranging from reluctance to adopt I4 technologies to active opposition such as sabotage or cyberloafing (Kleijnen et al., 2009; Ram and Sheth, 1989).

These varying forms of resistance do not simply delay technological adoption but they also carry significant psychological consequences for employees. Employees may experience mental strain, work-home conflict, digital stress, emotional exhaustion, and other adverse psychological effects (Ali et al., 2016; Ayyagari et al., 2011; Mache and Harth, 2020). Understanding and mitigating employee resistance is crucial to the success of digital transformation.

While much of the research on resistance has focused on cognitive processes—how employees understand and interpret changes—the role of emotions has often been overlooked (Erwin and Garman, 2010; Oreg and Michel, 2023). Recognizing the emotional foundation of resistance is critical, as these emotions often shape how employees react to changes. In light of this, managers must not only recognize but actively engage with their employees' emotional states to reduce resistance effectively. One particularly promising approach is the use of interpersonal emotion regulation (IER), a set of strategies that managers can employ to address and alleviate employee resistance by managing their emotional responses to change.

Research shows that effective managers use empathy, communication skills, and an understanding of technology to address employees' emotional responses (McColl-Kennedy and Anderson, 2002; Schiuma et al., 2024). Negative emotions are prevalent in response to change, and managers must understand how to regulate them (Van Dam, 2018; Kiefer, 2005). However, attention to emotion regulation in the context of transformational change is scarce (Van Dam, 2016).

These are the gaps this dissertation aims to address. This dissertation examines how emotions influence resistance and how managers can regulate negative emotions to affect behavioral outcomes through IER, as explained next.

II.Research Objective and Questions

The objective of this study is to enhance our understanding of employee resistance to digital technologies and the crucial role emotions play in shaping that resistance. It also explores how emotion regulation may mitigate such resistance. This thesis consists of three

empirical studies, all of which examine the role of emotions and interpersonal emotion regulation (IER) in relation to workplace resistance. Specifically, the research investigates the processes underlying employee resistance, particularly in response to digital technologies and robotization from Chapter 2 onwards. The dissertation addresses a significant gap identified in the literature, which underscores the lack of attention to emotion regulation theories in organizational change research (Oreg and Michel, 2023). Building on this observation, my research aims to fill this void by examining the role of IER strategies in the context of resistance.

Research on resistance to digital transformation is a growing field, and my interest in this topic is driven by the challenges organizations face as they attempt to innovate in rapidly changing environments. Employee resistance to the implementation of new technologies can hinder organizational progress. Although this topic has been explored, existing scholarship has undervalued the role of emotions in employee reactions to change. As noted by Van Dam (2018), little attention has been paid to the emotional dimension of resistance. Similarly, Tsaousis and Vakola (2018) call for more research into the cognitive, behavioral, and emotional factors that shape employee responses to organizational change. This thesis addresses three key research questions, as outlined below.

The first research gap centers on the emotions that arise when employees encounter new technologies and how these emotions influence their behavior. The first chapter addresses this gap by conceptualizing resistance through a systematic review of the literature. The first research question (*RQ1: What are the primary barriers to digital technology adoption in the workplace?*) focuses on identifying the barriers to technology adoption. The answer to this question emerges from a review of scattered literature on the topic. This, in turn, led to the second research question: RQ2: *What perceptions motivate employees to resist digital technologies in the workplace*? To answer this, I draw from Integrated Threat Theory, which explains resistance as a response to perceived threats—both tangible and intangible—associated with digital technologies. Four distinct pathways of resistance, based on different types of perceived threats, are identified, each focusing on the emotions and behaviors that such perceptions trigger.

Given the importance of emotions in shaping resistance to new technologies, the second research gap explores strategies that organizations can use to weaken this resistance. Despite extensive research on resistance management, most studies focus on cognitive approaches, such as involving employees in decision-making (van Dijk and van Dick, 2009). However, recent scholarship has emphasized the need for strategies that address emotional factors as well (Oreg and Michel, 2023). Chapter 2 seeks to fill this gap by examining emotion regulation strategies that can reduce resistance (RQ3: *What strategies are effective and are employed by management to regulate others' emotions during robotization?).* Through a case study of two organizations undergoing robotization, this chapter highlights IER as a promising strategy. Interviews with managers reveal that psychological safety plays a key role in mediating the relationship between IER strategies and resistance. IER increase psychologically safe and attenuate resistance to change among employees. However, due to the qualitative nature of the study, Chapter 2 could not establish causal relationships between these constructs.

To address this limitation, Chapter 3 tests the effectiveness of IER strategies through an experimental study. Specifically, it examines how the use of perspective taking by management can decrease resistance by fostering psychological safety. The fourth research question (RQ4: *How does displayed and communicated perspective taking by management decrease resistance?)* builds on insights from Chapter 2. By fostering psychological safety, perspective taking can help neutralize negative emotions and reduce resistance. This chapter seeks to empirically validate the idea that perspective taking is an effective strategy for reducing resistance.

This thesis provides insights into the emotional dimensions of technological change, addressing a crucial gap for academics and professionals in technology management, human resources, and organizational change. Specifically, it examines how employees emotionally respond to the introduction of new technologies, a topic of growing interest for those studying technological implementation and resistance to change. Recent scholarship, as noted by Oreg and Michel (2023), has begun to shift from traditional cognitive models of resistance to explore these emotional responses more deeply. By building on and expanding these recent frameworks, this thesis sheds light on how emotions, beyond mere cognition,

drive resistance behaviors during organizational change. Accordingly, this thesis aims to provide insights particularly valuable for academics and professionals in the fields of technology management, human resources, and organizational change.

Prior research assumes that employee resistance can be addressed through rational, cognitive strategies—for instance, engaging employees in decision-making to encourage participation (van Dijk and van Dick, 2009). While these assumptions are partially accurate, recent studies suggest that these strategies overlook the emotional factors that influence resistance (Oreg and Michel, 2023; van Dam, 2018). The field has begun recognizing this oversight, signaling a shift toward understanding the emotional aspects of resistance and the emotional barriers to technology adoption (Beaudry and Pinsonneault, 2010). However, existing literature remains limited in offering comprehensive strategies to address these emotional factors, focusing primarily on cognitive interventions. This gap suggests the need for further exploration of emotional management strategies within organizations, offering a more holistic approach to managing resistance to technology-driven change, which I hope my thesis covers. Furthermore, in the information systems (IS) scholarship exploring transformational changes from an individual and human level is understudied (Braojos et al., 2024; Markus and Rowe, 2023). Instead existing research has largely concentrated on business models and firm performance (Noesgaard et al., 2023). Yet scholars have also acknowledged that employees' emotions and behaviors are essential factors for sustainable transformational changes (Savela et al., 2021). Accordingly, my thesis explores this individual dimension from the perspective of employees and managers.

Additionally, I want to highlight that in Chapter 1 I use the broader term 'digital technologies' to provide a comprehensive foundation for discussing digital transformation and to understand what it entails. However, from the Chapter 2 onward, I chose to focus specifically on 'robotization' because it is currently at the forefront of digital transformation. As scholars have concluded, robotization is key driver of digital transformation, enabling the automation of repetitive and rule-based tasks, increasing efficiency, and ultimately reshaping business models (Siderska, 2020). Moreover, the implantation of robotization is seen as one of the essential competencies needed for successful digital transformation (Andriole, 2018; Pramod, 2022). Given its transformational potential, robotization is increasingly perceived as

a significant factor in reshaping the workforce, raising concerns about job displacement and the future of employees at the workplace. Therefore, my shift in terminology reflects this growing emphasis on robotization as a defining element of contemporary digital transformation.

Concluding, my thesis integrates various research areas - particularly those connecting psychology, information systems, and change/resistance management – to provide a more holistic understanding of how technology influences employees' behavior and the adoption of new technologies. By bridging these disciplines, it aims to contribute meaningfully to this evolving discourse by offering new insights into the emotional dimensions of resistance to technology adoption. In doing so, it examines the interplay between emotional responses and resistance, it also provides practical strategies and frameworks that complement traditional cognitive approaches. As such, the findings will be of value not only to researchers but also to practitioners seeking a more holistic understanding of employee reactions to technological change. This work will help bridge the gap between theory and practice by equipping organizations with actionable emotional management strategies, thereby enhancing their ability to implement technology-driven changes effectively. Scholars and practitioners in information system management, human resource management, and change management will find this research particularly useful in refining both academic perspectives and organizational interventions, fostering smoother transitions during technological adoption.

III. Research Paradigm

Every research is grounded on fundamental philosophical underpinnings concerning what defines 'valid' research and which method(s) are suitable for knowledge advancement in a particular study (Bogna et al., 2020). Therefore, understanding these assumptions is crucial for both conducting and assessing research effectively. This thesis adopts a critical realist ontology. Critical realism, as described by Bhaskar (1998), postulates the existence of an objective reality independent of our awareness of it. Ontologically, there are three domains in critical realism, namely, the real, the actual, and the empirical (Bhaskar, 1998). The real domain encompasses the structures of objects, both physical and social, which possess capacities for behavior known as mechanisms. These mechanisms may or may not cause events in the actual domain. Subsequently, these events may or may not be observed in the

empirical domain. However, these mechanisms may become evident through events and experiences at the actual and empirical levels, respectively (Danermark et al., 2001). These events are conceptually mediated, influenced by human experiences and interpretation (Danermark et al., 2001; Fletcher, 2017).

The researcher's task is then to use perceptions of empirical events to identify the mechanisms that cause those events (Collier 1994). Critical realism integrates a realist ontology with an interpretive epistemology (Archer et al. 1998). Within a critical realist framework, the utilization of existing theories to guide research is recommended (Fletcher, 2017). In this study, theories serve as a foundational framework for addressing the research question. Additionally, Perry (1998) postulates that critical realism is the ideal philosophical perspective for guiding case study research. O'Mahoney and Vincent (2014) postulated two steps that the researcher should undertake under a critical realist perspective. Firstly, the researcher should identify the key theories surrounding the phenomena under study, as recommended also by Fletcher (2017); secondly, she should identify the mechanisms and the context within which the phenomena functions and which may warrant further exploration (O'Mahoney and Vincent, 2014). In this study, intergroup threat theory and interpersonal emotional regulation theories serve as a foundational framework for addressing the research question. Here, I explore how these strategies function within an organizational setting. This involves analyzing factors such as organizational culture and management styles and how they may influence the effectiveness of interpersonal emotion regulation strategies in reducing resistance.

Mingers (2004) also identified that abduction and retroduction are key characteristics under the critical realist perspective. Abduction refers to moving between theory and data, and then back to the theory, developing an understanding as the research is progressing in order to enhance the knowledge of what is taking place and why (Suddaby, 2006). Retroduction refers to "moving from a conception of some phenomenon of interest to a conception of a different kind of thing (power, mechanism) that could have generated that given phenomenon" (Lawson, 1997, p.236). The notion of abductive reasoning has been used in this thesis in order to advance existing theory by uncovering new insights and connecting

them to prior theoretical knowledge. Retroduction has also been incorporated by focusing on other potential contexts or organizational settings that may lead to reducing resistance.

Given my critical realist epistemological research stance, a mixed method approach was employed in this thesis. Chapter 2 uses qualitative data to provide rich, in-depth insights into the strategies for mitigating resistance, while Chapter 3 employs quantitative data, collected through an experimental survey approach, to test these strategies. Scholarship has also noted that critical realism is grounded upon two theory-informative research approaches: emerging—progressing from empirical observation and inquiry toward the development of theoretical understanding, and confirmatory—advancing from a theoretical concept to empirical testing of hypotheses modes of theory (Mukumbang, 2023). This dissertation employs two scientific approaches: emergent in Chapter 2 and confirmatory in Chapter 3, wherein the findings from Chapter 2 are subjected to further testing.

IV. Thesis outline

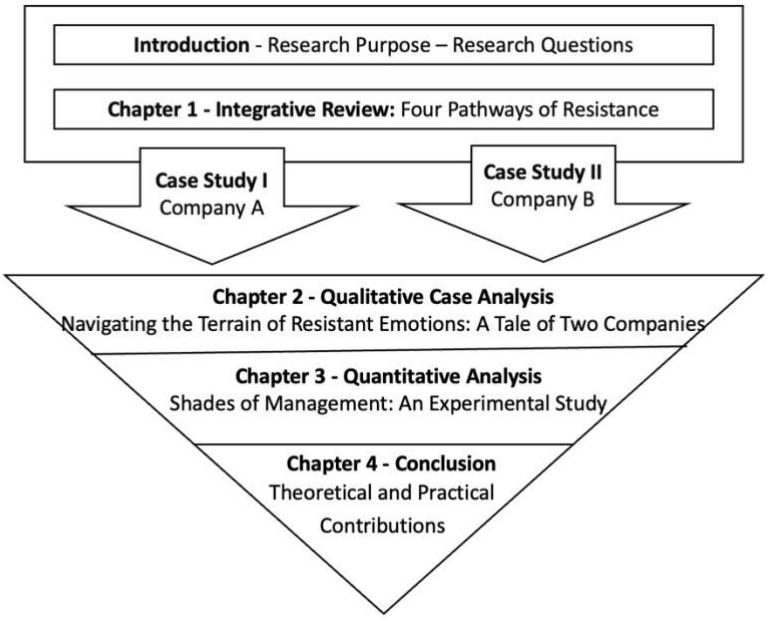
This dissertation unfolds in three chapters to explore the above research questions. The fourth chapter focuses on the contributions of this research, both theoretical and practical, and addresses its limitations. It also outlines potential future research directions. The underlying premise is that comprehending and addressing the emotional aspects of resistance is pivotal for mitigating resistance among employees. Initially, the study aims to understand the reasons for resistance and subsequently delves into strategies that management may implement that may effectively diminish resistance. A mixed-method design is used, as recommended by social research scholars that investigate a complex phenomenon (Taherdoost, 2022).

The initial three chapters comprise independent studies conducted sequentially, with each subsequent chapter building upon the findings of the previous chapter. Chapter 1 involves a systematic literature review that laid the foundation groundwork exploring the reasons for resistance. The insights from this first chapter guided the focus of chapter 2. Subsequently, chapter 3 emerged as a direct result of the findings made in Chapter 2. Here

the focus was to test the results of chapter 2 through an experimental study. This sequential approach of each chapter contributed to a cohesive and comprehensive thesis (see

Figure 0-1).

Figure 0-1 Thesis Model



Chapter One

The first chapter provides an overview of existing approaches to studying resistance to Industry 4.0 (I4) technologies, drawing from Integrated Threat Theory. Here, resistance is conceptualized around the notion of threat, with clear boundaries delineated between resistance and non-use. The dominant literature often conceptualizes resistance as non-adoption or non-usage, hence portraying upskilling/reskilling as suitable strategies under the assumption of a skill misalignment causing resistance. However, this approach may overlook threats to social relations or professional identity, which can also fuel resistance. Therefore, resistance must be conceptualized from a cognitive, emotional, and behavioral dimensions. An analysis of 63 studies reveals that resistance comprises cognitive, emotional, and behavioral components. A cognitive appraisal of technology as a threat triggers various emotions, leading to discrete behavioral outcomes. Furthermore, the chapter maps various

theories used to comprehend resistance to digital technologies, culminating in an integration and reconceptualization informed by intergroup threat theory. In addition, this chapter highlights the underexplored role of emotions in employee resistance, emphasizing that prevalent strategies for addressing rejection—such as upskilling or reskilling the workforce—often overlook the emotional drivers behind resistance. While skill development is important, these strategies do not fully account for the cognitive and emotional responses that employees experience when faced with perceived threats, such as technological change.

Building on this, the proposed pathways in Chapter 1 offer a parsimonious and integrated explanation of how resistance emerges based on these perceived threats. Since initial appraisals shape subsequent emotions and behaviors, the framework underscores the critical role of understanding which resources employees perceive as threatened, thereby explaining variations in resistance-related actions. This emotional and cognitive focus is crucial, as traditional rational decision-making models often overlook these dimensions. The review further identifies a significant gap in the literature concerning the role of emotions in resistance phenomena, where rational models are mostly examined. These findings highlight the pivotal influence of emotions in shaping resistance behaviors and attitudes, offering valuable insights for designing more empathetic and effective change management strategies.

As a result, this integrative review contributes to advancing theoretical frameworks and practical interventions aimed at mitigating resistance to technological innovation in the workplace. Additionally, the review reveals that blue-collar workers, particularly in the context of robotization, have been understudied. Consequently, Chapter 2 focuses on manufacturing companies undergoing robotization, while Chapter 3 continues this exploration, examining how these emotional and behavioral insights can be applied in real-world settings.

Chapter Two

The second chapter focuses on IER strategies that are helpful in regulating emotions in employees after a robotization implementation that occurred in manufacturing companies. In response to calls for greater attention to context in emotion regulation (ER) (Troth et al,

2017), this thesis situates its exploration of ER within the specific context of workplace robotization. Robotization presents a unique and underexplored setting, where employees' emotions are deeply influenced by the perceived threat of technological change, job displacement, and the transformation of work processes. Chapter 2 builds upon the pathways introduced in Chapter 1, applying them to the two extreme cases of robotization. Specifically, the chapter explores how the pathways can be targeted through interpersonal emotion regulation strategies to attenuate resistance. The findings show that by aligning IER strategies with the pathways identified in Chapter 1, such as addressing employees' perceived threats resistance may be significantly reduced. This chapter thus offers valuable, context-specific guidance on how organizations can use IER to mitigate the negative effects of robotization.

In addition to this, the chapter explores the specific obstacles associated with organizational change and critiques commonly discussed methods, such as upskilling and reskilling, as insufficient for addressing the emotional underpinnings of resistance. While skill development remains important, the emotional dimension highlighted by the pathways from Chapter 1 reveals that focusing solely on technical solutions overlooks the deeper cognitive and emotional triggers driving resistance. By integrating IER strategies that address these underlying emotional responses, organizations can develop a more holistic approach to alleviating resistance during technological change, such as robotization. The empirical part focuses on two case studies that reveal the various interpersonal emotional strategies implemented by two firms, resulting in different outcomes in terms of employee resistance. Here the focus is on managers, interviewing them in order to understand what strategies have been implemented to weaken resistance in employees. Through detailed analysis and qualitative inquiry, this case study seeks to bridge the gap between theoretical understanding and real-world application, offering actionable insights for management and practitioners navigating resistance to change. Consequently, this chapter seeks to better understand the exploration of interpersonal emotion regulation in the realm of resistance theory, particularly concerning robotization in professional environments.

Chapter Three

Chapter 2 identified specific interpersonal emotion regulation (IER) strategies that may mitigate employee resistance. Building on these findings, Chapter 3 aims to explore the

impact of one specific strategy: displayed perspective-taking, as an emotional regulation technique, in reducing both active and passive forms of employee resistance. The focus here is on how displayed perspective-taking, when used by managers, can influence resistance behaviors such as sabotage or turnover intentions. To investigate this, an experimental design was employed using a *stimuli-driven* online survey. Participants were exposed to two scenarios: one in which a manager demonstrates perspective-taking and another in which they do not. Grounded on Niven and colleagues' (2009) IER framework, I propose that in the context of robotization, a manager's use of IER—specifically perspective-taking—will reduce employee resistance through a serial mediation process. This process involves an increase in psychological safety, which in turn decreases negative emotions, ultimately leading to less resistant behavior.

Conclusion

This last chapter discusses the findings of the previous studies and explores the contributions of the thesis. In particular, this dissertation proposes theoretical and practical contributions. I contribute to the resistance scholarship by firstly presenting an integrative framework which proposes four potential pathways for resistance in the workplace. Then the qualitative case study investigated how interpersonal emotional regulation may attenuate resistance in employees. The quantitative experimental study tests the findings from chapter 2. These findings extent our understanding of IER by acknowledging the pivotal role that psychological safety plays both in the emotion context and in the resistance. With these findings, management is encouraged to acknowledge and understand how emotion regulation strategies can be used at the workplace particularly in the context of robotization and organizational change.

Concluding, the scholarly discourse surrounding resistance often overlooks the pivotal role of emotions in shaping individuals' responses to technological change initiatives. By disregarding the emotional dimension of resistance, scholarly discourse risks oversimplifying the complexity of human responses to change and thus may hinder the development of comprehensive strategies for managing resistance effectively. Therefore, this thesis integrates insights from the study of emotions into discussions of resistance which may offer a more nuanced understanding of individuals' reactions to organizational change. Further, it also

provides valuable insights how interpersonal emotion regulation may be used as a strategy to attenuate resistance in employees. In sum, this thesis provides a novel approach to study a strategy that may weaken resistance by exploring interpersonal emotion regulation between management and employees, thereby also responding to the calls made by recent scholarship.

Chapter 1 A CONCEPTUAL EXPLORATION OF EMPLOYEE RESISTANCE TO DIGITAL TRANSFORMATION: AN INTEGRATIVE REVIEW

In this chapter[1], the distinctiveness of digital transformation and the reasons for employee resistance are explored. Unlike previous technological advancements, digital transformation represents a fundamental shift in organizational processes, requiring a reevaluation of traditional structures and practices. Central to this discussion is the identification of employee resistance as a critical factor contributing to the failures of digital transformation initiatives. Specifically, it emphasizes the significance of addressing employee resistance. This chapter proposes a reconceptualization of resistance by reframing digital technologies as agents with causal powers rather than neutral tools and by acknowledging the multifaceted nature of job resources beyond income. Drawing from theories of social conflict, a three-staged model of resistance is presented with four pathways. This model elucidates how perceived threats to resources influence employees' perceptions, emotional responses, and subsequent actions in the workplace. It integrates past research into a unified theoretical framework, thus providing valuable insights for navigating the challenges of digital transformation effectively. In sum, this chapter describes firstly extant perspectives on how resistance is examined, critically assesses them to identify their shortcomings and ultimately proposes a reconceptualization of resistance from conflict theories.

1.1 Introduction

New technologies are paving the way to the digital transformation of businesses and societies. These new technologies will fundamentally alter businesses, their structures and operations. Digital technologies and tools such as Big Data, robotics, artificial intelligence (AI), automation and the Internet of Things (IoT) are already radically changing an employee's workplace (Vial, 2019). Digital transformation is therefore a revolutionary phenomenon with interconnections and interactions. Digital transformation is therefore the last step in changing the landscape to a virtual, digital workspace world. It focuses on transforming all aspects of the organization to a digital environment. It is the integration of technology into all areas and the changes that are derived from this integration (Kaplan and Haenlein, 2019).

[1] This chapter was partially published as Cieslak, V., Valor, C., Moving beyond conventional resistance and resistors: an integrative review of employee resistance to digital transformation. Cogent Business & Management. Vol. 12, nº. 1, pp. 2442550-1 - 2442550-31, December 2025. [Online: December 2024] JCR: 3,000 Q2 (2023) - SJR: 0,567 Q2 (2023)

This interplay between employees and new digital tools will pave the way to the fourth industrial revolution (Industry 4.0). These technologies are different from other IT technologies in that they enable “the combination and connectivity of innumerable, dispersed information, communication and computing technologies” (Bharadwaj et al., 2013, p. 472). This feature shifts the technological paradigm, as these technologies facilitate a more encompassing and far-reaching transformation (Guenzi and Nijssen, 2021; Kellogg et al., 2020). Compared with the introduction of an IT system, digital technologies (DT hereafter) create an overarching digital infrastructure of cyber-physical systems in which humans and machines are perpetually connected (Hanelt et al., 2021; Hofmann and Rüsch, 2017; Vial, 2019). This infrastructure links the physical and digital worlds and enforces human-machine interactions (Pereira et al., 2023). Further, the digital transformation of an organization will trigger systemic changes by introducing new systems, structures, and work behaviors. With the advent of the fourth industrial revolution, the focus will be on advanced technologies such as artificial intelligence, driving the digital transformation of businesses. Technologies such as artificial intelligence or algorithms differ from other IT technologies in that they may even replace humans (Hanelt et al., 2021; Pereira et al., 2023). This characteristic is likely to disrupt interpersonal relations in organizations and limit job prospects in several industries. Finally, these technologies are being implemented at every organizational level, requiring all employees, regardless of their previous qualifications, to acquire new skills and adapt to new digital behaviors (Hanelt et al., 2021).

For these reasons, digital technologies are considered "game-changing" (Sebastian et al., 2020, p. 197). For these reasons, digital technologies are considered "game-changing" (Sebastian et al., 2020, p. 197). However, it is crucial to note that a significant number of digital transformation initiatives fail to achieve their intended goals, resulting in only minor improvements rather than full transformations (Klein et al., 2023; Moschko et al., 2023; Smith and Beretta, 2021). In fact, nearly 70% of digital transformation initiatives fail (Kane et al., 2019; Oberländer et al., 2021), and research by Wade and Shan (2020) further indicates an even higher failure rate of 87.5%, surpassing that of traditional organizational changes (Klein et al., 2023). Researchers have emphasized the significant impact of employees on the success of digital transformation initiatives (Wade and Shan, 2020). A study indicated that the

effectiveness of digital transformation strategies relies heavily on employee support (Schneider and Sting, 2020).

Accordingly, digital transformation, with all its new forms and novel concepts, will become a necessity for companies to stay competitive. Previous studies generally focus on the acceptance of a specific digital tool without considering the individual employee (Guenzi and Nijssen, 2021). Yet, echoing the importance of employee resistance to digital technologies (Al-Sulami et al., 2024), many studies have examined the barriers to or employee perceptions of these technologies. However, this scattered evidence needs a unified, integrated conceptualisation that can systematically explain how resistance emerges and how it manifests.

1.2. The notion of resistance

According to Peiperl (2005, p.348) resistance is "active or passive responses on the part of a person or group that militate against a particular change, a program of changes, or change in general". Resistance is widely regarded as a multi-dimensional construct encompassing a cognitive, affective, and behavioral component (Erwin and Garman, 2010; Piderit, 2000). A focus on resistance allows expanding the range of potential employees' negative reactions to digital transformation, comprising both passive resistance (e.g. non-use) and active resistance (e.g., voicing discontent or sabotaging). As a distinct construct, resistance is explained by factors other than those used as antecedents of adoption (Davis, 1989; Venkatesh et al., 2003; Venkatesh and Bala, 2008). To illustrate, research has demonstrated that a well-designed technology, easy to use and useful, was resisted since potential users feared it would make them powerless (Ali et al., 2016; Li et al., 2016). Similarly, whereas adoption theories do not consider emotions as an antecedent of adoption, emotions have been proven fundamental to explaining employee resistance to new technologies (Beaudry and Pinsonneault, 2010). Here I define resistance as a multi-faceted concept involving a cognitive, affective and behavioral dimension.

1.2.1 Cognitive Dimension

The cognitive dimension refers to the individual's appraisals of innovations and the changes that such innovation may afford; specifically, the cognitive dimension of resistance entails the perceived risks that employees associate with digital technologies. Risks span from physical risks to oneself or loss of resources, but also other intangible risks such as a violation of one's traditions, norms, or beliefs (Kleijnen et al., 2009). Particularly in the Information Systems (IS) domain, resistance is seen as stemming from cognitive factors that impede employees' adoption of novel technology (Ferneley and Sobreperez, 2006; Rivard and Lapointe, 2012; Ilie and Turel, 2020). Employees resist these technologies due to various factors, such as the implementation of novel systems that are incompatible with existing work habits and practices, or the perception that novel technologies are excessively time-consuming or challenging to use. This cognitive factor also encompasses poorly defined systems (Ferneley and Sobreperez, 2006; Klaus and Blanton, 2010; Ilie and Turel, 2020). Consequently, there exists a cognitive dissonance between technology design, interface, and employees' work habits and needs. Moreover, this perspective recognizes that employees do not resist change per se but tend to prefer their current work situation (Lapointe and Rivard, 2005; Kim and Kankanhalli, 2009). This aligns with status quo bias theory (Kim and Kankanhalli, 2009), which suggests that people naturally are inclined to stay with the familiar. Cognitive factors play a key role in this resistance, including rational decision-making (weighing the costs and uncertainties of change), cognitive misperceptions (such as loss aversion), and commitment to the status quo (like the sunk cost fallacy and the preference to maintain control) (Kim and Kankanhalli, 2009).

1.2.2 Affective Dimension

The affective dimension of resistance comprises the emotions that arise in response to perceived risks (Brief and Weiss, 2002). These emotions are experienced at the individual and group level (Niedenthal and Brauer, 2012). According to the affective events theory (Weiss and Cropanzano, 1996), phenomena cause intrapsychic emotions. These, in turn, can also be socially shared (Burkitt, 1997). It is apparent that as long as digital technologies are appraised as a risk, employees will experience negative emotions (Molander and Hartmann,

2018), such as fear, anxiety, resentment, rage, or hatred (Stephan et al., 2016). Moreover, a heightened perceived risk may also lead to increased rumination so that these negative feelings may amplify (Bryant-Davis and Ocampo, 2005) with the possibility of spillover effects on various other non-professional spheres such as the family domain (Leigh and Melwani, 2022).

Emotional regulation may also play a part in the formation of employee resistance. Employees also need to regulate their own emotions as well as the emotions of their own colleagues (Troth et al., 2018). Employees' suppression of their negative emotions to comply with organizational rules or expectations exhausts the individual's psychological resources (Leigh and Melwani, 2022); in order to protect these resources, individuals engage in protective behaviours such as withdrawal, among other forms of resistant behaviour (Leigh and Melwani, 2022).

Not only can risks elicit intrapersonal emotions but also group emotions. Since ingroup members may have converging threat appraisals, group members can take part in emotional sharing (Rimé, 1999), so emotions may become contagious (Barsade, 2002). Additionally, negative group emotions may also arise when negative memories are shared and felt by all group members (Leigh and Melwani, 2019). Accordingly, emotions play a crucial role in individuals and thus also have consequences for the organization (Klok et al., 2023).

1.2.3 Behavioral Dimension

The behavioral dimension comprises the actions undertaken by individuals or groups because of the perceived risk. Resistance can manifest in myriad actions, be they passive or active, overt or covert, individual or collective. Resistance to digital technologies may manifest in passive individual actions such as non-work or withdrawal of labor (Symon, 2005; Thanem and Elraz, 2022) or as active behaviors such as sabotage, cyberloafing, or more mundane resistance behaviors (Mumby et al., 2017; Thanem and Elraz, 2022). Furthermore, resistance does not necessarily manifest in overt disengagement behaviors but can also manifest in covert actions while manipulating technology (Knights and McCabe, 1998), for example, by obfuscating data for the worker's advantage (Newlands, 2021). Resistance can also manifest discursively, when employees voice discontent or verbally challenge the dominant practices

and modes in an organization (Mumby et al., 2017) or ridicule technologies, even with humor (Ackroyd and Thompson, 1999). Finally, resistance can manifest in individual or collective actions. These actions can also take the form of collective infrapolitics, where the group performs disguised, anonymous resistance or public displays of opposition (Mumby et al., 2017).

The manifold behavioral manifestations of resistance have been captured in the tripod rejection- postponement- opposition (Kleijnen et al., 2009; Ram and Sheth, 1989). Rejection is the aversion to adopting an innovation (Rogers, 2003) rooted in the attitude or behavior that rejects changes to the status quo. Postponement occurs when individuals delay an innovation, believing it will be more appropriate in the future (Kleijnen et al., 2009; Ram and Sheth, 1989). Opposition is an active, strong manifestation of resistance, also known as “active rebellion” (Kleijnen et al., 2009), causing individuals to engage in more aggressive behaviors. I offer a systematic categorization and description of these behavioral forms of resistance in table Table 1-1.

It is important to acknowledge that the focus of this chapter is on the dynamics underlying individual resistance, which entails personal acts of defiance against technologies. While collective resistance is discussed below and plays a crucial role in organizational contexts, this study is specifically limited to intrapersonal behaviors. The majority of the papers analyzed in this research focused on acts of individual resistance, an orientation which influenced the direction of this study. The objective of this chapter is thus to provide a comprehensive and integrative framework for understanding individual employee resistance to digital technologies in the workplace.

Table 1-1 Forms of Resistance

	Active		**Passive**	
Resistance				
	Individual	*Collective*	*Individual*	*Collective*
	Employee Exit	Voicing discontent	Nonwork, absenteeism, Intentions to leave	Return to established routines
	Overt		**Covert**	
	Individual	*Collective*	*Individual*	*Collective*
	Sabotage	Public displays of resistance	Cyberloafing, manipulating technology	Anonymous groups of resistance

i) Passive resistance refers to the status quo bias in which workers are satisfied with their current work conditions and thus reject the novel technology through covert actions (Heidenreich and Kraemer, 2015). Manifestations of passive resistance are returning to the status quo, non-work or withdrawal of labor (Symon, 2005).

ii) Active resistance encompasses active manifestations against the implemented technology and is characterized by destructive behavior such as sabotaging, boycotts or strikes (Lapointe and Rivard, 2005). Active resistance can also be covert including mundane acts of resistance, such as cyberloafing or spilling coffee on a keyboard (Mumby et al., 2017).

1.2.4 Technologies

As previously mentioned, digital technologies will establish a unique environment where employees will collaborate with machines (Hanelt et al., 2021; Hofmann and Rüsch, 2017; Vial, 2019). Digital transformation and Industry 4.0 are overarching umbrella terms for many technologies that have been and are being introduced to the workplace, many of which

involve the integration of technologies into manufacturing or automatization processes (Neumann et al., 2021). Despite ongoing discussions, no consensus has been achieved regarding the specific technologies encompassed within the Industry 4.0 framework (Hofmann and Rüsch, 2017; Vial, 2019). Yet scholars Frank et al. (2019) and Vial (2019) postulated that the following technologies are the most crucial ones to the digital transformation processes: artificial intelligence or AI, algorithms, blockchain, cloud computing, big data, the Internet of Things (IoT), cobots, additive manufacturing, semantic technologies, automatization, and virtual or augmented reality.

As organizations are currently implementing them at every level causing higher efficiency and productivity (Vial, 2019) it is important to acknowledge the positive implications for employees. For instance, scholarship demonstrate that such technologies may lead to the creation of novel job demands and tasks, thereby having a reinstatement effect (Acemoglu and Restrepo, 2019; Willcocks, 2020). Moreover, it has also been acknowledged that they can enhance employee productivity by mitigating physical demands and increasing efficiency (Chuang et al., 2024). Furthermore, techno-eustress may cause employees to be more motivated and positively challenged at work (Tarafdar et al., 2024), and literature has also highlighted the potential increase in employees' creativity due to AI (Jia et al., 2024). Nevertheless, there still exists potential concerns such as technologies outperforming employees in various tasks (Kodra et al., 2013) thus leading to displacement effects (Cuccu and Royuela, 2024).

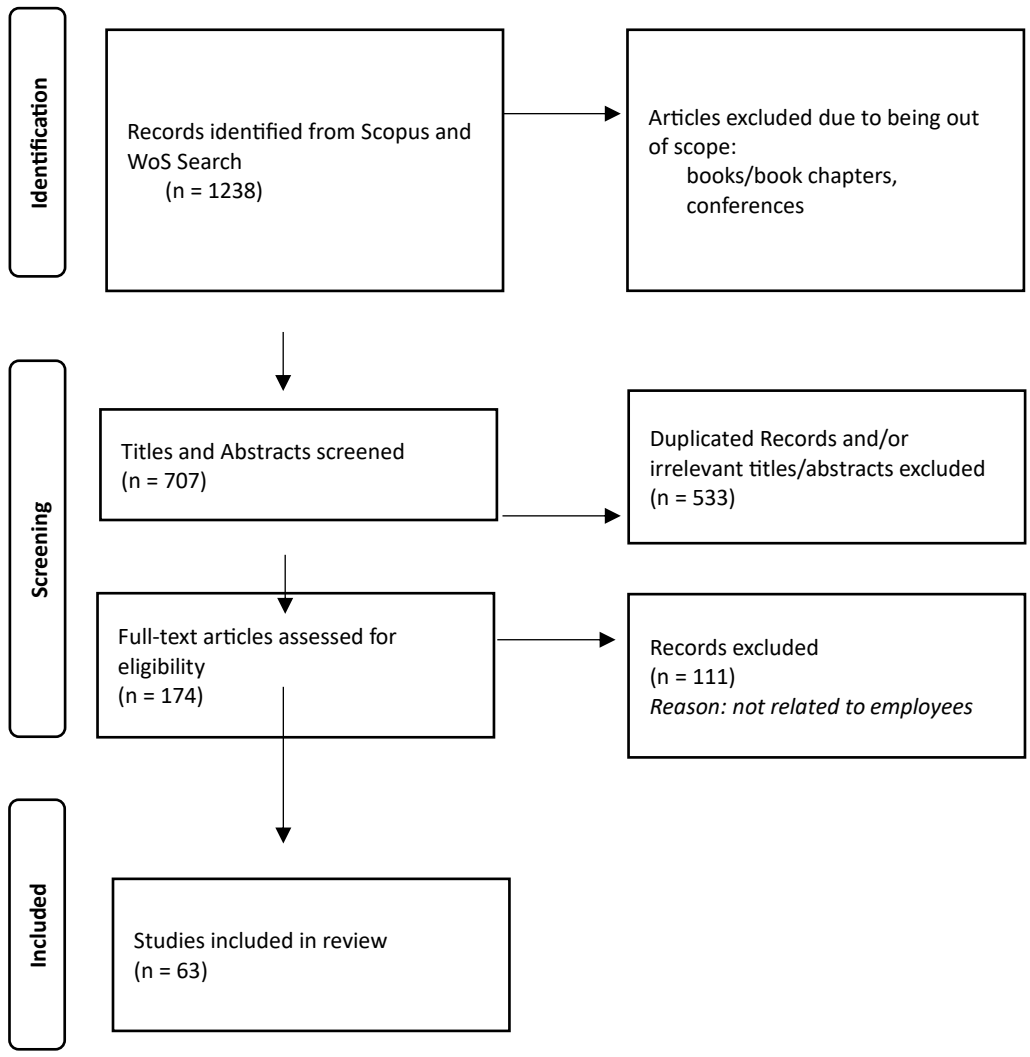
Moreover, as these technologies continually evolve and intersect, they change the way we live and work (Gebhardt et al., 2022; Hofmann and Rüsch, 2017; Neumann et al., 2021; Santana and Cobo, 2020). Given this rapid transformational change, I defend that employee resistance to digital technologies should be investigated in order to facilitate a smoother adaption. I advocate to understand resistance through a three-stage model. In this model, employees first appraise these technologies as threats rather than mere risks, which then triggers negative emotional reactions. These emotional responses, in turn, drive various forms of resistance, as employees perceive digital technologies as a threat to both their tangible and intangible resources. This approach allows for a comprehensive understanding of how appraisals of digital technologies as threats lead to negative affective reactions, subsequently

prompting various forms of resistance. To begin, I will review existing literature to explore how scholars have conceptualized resistance within the context of digital technology adoption. This review serves as the foundation for synthesizing insights into a comprehensive definition of resistance to digital transformation. Drawing upon Torraco's (2005) integrative review methodology, I critically analyze and refine existing perspectives on the topic.

1.3 Method

A systematic search of the literature was conducted to develop a synthesis of the state of the art (Tranfield et al., 2003) and to integrate the studies on employee rejection of digital transformation into a unified theory of resistance (Snyder, 2019; Torraco, 2005). The three-staged procedure developed by Tranfield et al. (2003), which includes planning, execution, and reporting, was followed.

Figure 1-1 Prisma Model



1.3.1 Planning

Digital technologies can be defined at different levels of abstraction, for example, at a high level of abstraction, such as robotic process automation, or at a more granular level, i.e., at the level of specific predictive algorithms or artificial intelligence interfaces. We chose to define these technologies at a higher level of abstraction and relied on the categories provided by Frank et al. (2019) and Vial (2019). This pool of technologies constituted the first group of keywords.

The second group of keywords captured employee rejection or resistance by including terms that have typically been treated as interchangeable with resistance, such as opposition or barrier (Kleijnen et al., 2009; Talke and Heidenreich, 2014). Furthermore, we also included keywords such as technostress, fear or vulnerability because, even if they are not interchangeable with the term resistance, they have been frequently cited as related with it (Brougham and Haar, 2020; Coupe, 2019; Dengler and Gundert, 2021). Accordingly, our search string was as follows: *TITLE-ABS-KEY ((worker OR workforce OR employee) AND (automation "OR "robotic*" "OR "artificial intelligence" OR "algorithm" OR "bigdata" "OR "blockchain" "OR ""IoT" "OR "cloud computing" "OR "Internet of Things" "OR "augmented reality" "OR "additive manufacturing" OR "virtual reality" "OR "digital"twin" "OR "cyber-physical system" "OR "robot" "OR "semantic technologies" "OR "smart manufact*" "OR "digital transformation" "OR "industry 4.0" "OR "digital disruption" "OR "technology disruption") AND (barrier* OR resistance OR rejection OR opposition OR insecurity OR technostress OR vulnerability OR fear OR anger OR frustration OR anxiety OR sadness OR threat))*

1.3.2 Execution

Searches were conducted in the Scopus and Web of Science databases, which are the most extensive databases containing peer-reviewed journals (Carvalho *et al*., 2013). The search was limited to articles that had been published in peer-reviewed journals up to November 2023. This search yielded 1,238 journal articles. The titles and abstracts of these articles were read to identify papers that met the following inclusion criteria: (1) published as English-language journal articles; (2) focused on the chosen technologies; (3) focused on

employee rejection, opposition, withdrawal or nonuse of DT; and (4) examined the cognitive (appraisals of DT) or emotional or behavioural dimensions of resistance in the context of digital transformation within organizational settings. Both qualitative and quantitative papers were included (Pittaway et al., 2004; Tranfield et al., 2003). We excluded (1) conference papers and book chapters; (2) articles that did not focus on perceptions, vulnerability, job insecurity or rejection/resistance on the part of workers; (3) articles that did not focus on workers (e.g., consumer resistance); (4) articles that used technology as an educational tool (e.g., those in which technology was used for training rather than performing job tasks); and (5) articles that examined organisational or managerial perspectives on digital transformation, as opposed to employee perceptions. At this stage, the titles and abstracts of these articles were screened to identify potentially relevant articles; this process was conducted independently by the two authors, and the initial intercoder reliability was 95%. Any disagreements were resolved through discussions among the authors (Tranfield et al., 2003). The abstract screening process started with a manual review of each potential article, which took into account all articles that focused on resistance to DT. Articles were chosen on the basis of their conceptualization of resistance within an empirical context. The chosen papers were expected to yield valuable insights into the complex dynamics underlying employee resistance to digital transformation and to provide implications regarding ways of effectively addressing and managing resistance within contemporary workplaces. This process led to the identification of a total of 174 papers for further evaluation. In the following stage, these papers were read in full. Upon review (with an initial intercoder reliability of 93%), 111 papers did not meet the inclusion criteria. This process resulted in a final sample of 63 papers.

1.3.3 Coding

The coding process employed in this research encompassed a comprehensive examination of various dimensions related to threat perception and employee resistance to DT. The authors coded the articles independently. The intercoder reliability based on a sample of 10 articles was 91%. Any differences in coding between the authors were resolved through discussion until consensus was reached. This process involved reexamining the coding scheme, rereading the articles, and discussing any discrepancies. Throughout the coding process, the authors maintained ongoing communication to ensure that any new issues or

ambiguities that arose were promptly addressed. Regular meetings were held to ensure consistency throughout this process and to address any emerging discrepancies.

A set of inductively identified codes was established, which focused on methodological details as well as key thematic elements, including the technology under investigation, the type of workers involved, industry-specifics information, appraisals of or judgments regarding the technology in question, the emotions experienced by employees, behavioural manifestations of resistance, and the outcomes of the resistance efforts in question. We grouped all studies that focused on emotions, all papers that examined appraisals, and all papers that investigated behavioural manifestations. We also sought to capture the types of threat perceived by employees, the emotions elicited, the actions taken by employees in response to these perceived threats, and the functions of the technologies involved (e.g., replacement or identity erosion). This process aimed to synthesize the findings across the articles with the goal of identifying common patterns in employee resistance to DT. Through the pattern matching process, three streams then emerged, and we recodified the papers in accordance with these three streams. This recoding process facilitated a nuanced exploration of the links among perceived threats, emotional responses, and the behavioural manifestations of resistance. Specifically, within the cognitive dimension of coding, threat perceptions were scrutinized on the basis of judgements regarding the corresponding impacts on job resources, roles, or personal threats to the individual. Furthermore, we also coded the role of technology and its functions, such as whether it was intended to replace or substitute for peers.

Through an iterative process that involved drawing from integrated threat theory and appraisal-based theories of emotions as well as revisiting the papers revealed in the search, a conceptual framework was developed with the goals of integrating and mapping the emerging constructs. The Integrated Threat Theory explains resistance as a response to perceived threats—both tangible and intangible (Stephan et al., 2016) while appraisal-based theories of emotions (Lazarus, 1991; Lerner et al., 2015) help to understand the various emotions that are elicited when faced with a threat. The development of this framework drew inspiration from previously proposed perspectives on threats to resources. By integrating these previous

perspectives and mapping the various forms of resistance, different pathways of resistance were identified.

1.4 Results

1.4.1 Description of Studies

Most of the articles included were published between 2020 and 2022. A focus on white-collar workers was dominant (50% of the papers), while 18% of the papers studied blue-collar workers and the rest studied a combination of these two categories. 39% papers employed a quantitative approach, 49% a qualitative approach and 11% a mixed method approach (Figure 1-2 Distribution of Studies) 30% of the papers analysed studied AI/algorithms; 25% studied robotics (cobots, robotisation or robotic process automation), 10% studied automation, and 5% focused on big data/blockchain technology, as shown in

Figure 1-3. The rest of the papers (25%) did not specify any technology, focusing on all DT technologies. In terms of industry, 39% of the studies investigated DT technologies in service industries - hospitality services (restaurants, hotels), healthcare, or finance. 21% of papers examined manufacturing settings, such as the automotive, the remaining studies did not specify a particular industry.

Figure 1-2 Distribution of Studies

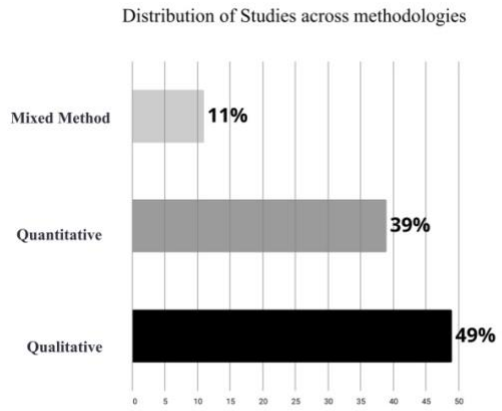
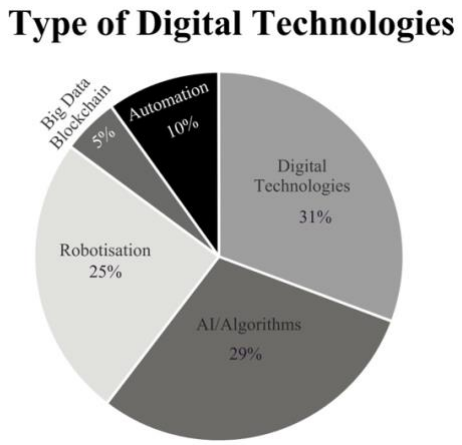


Figure 1-3 Type of Digital Technologies



The coding process helped to categorize extant perspectives into three streams. The initial perspective, observed in 38% of the articles, depicts resistance as responses to job insecurity or anticipated future job displacement. The second perspective, evident in 33% of the papers reviewed, characterizes resistance as stemming from a mismatch between workers and technology, where inadequate employee skills impede assessments of technology's utility and usability. The third perspective, found in 29% of the literature, emphasizes the impact of these technologies on identities and social relationships. It is important to mention that the articles studied emotions explicitly, with some measuring them directly, while others examined them through a qualitative, integrative approach. The themes were a focal point in the studies, addressing key concerns such as job security or loss of identity. Additionally, some studies overlapped across categories. Each of these perspectives is elaborated upon sequentially, with a summary provided in table Table 1-2.

Table 1-2 Perspectives

Perspective	Resistance as job insecurity	Resistance as misalignment	Resistance as loss of professional identities and social relations
Reasons for resistance	Perceived future job loss	Lack of skills and inertia limit perceived usefulness and ease of use	Perceived erosion of power, professional identities, and social relations
Emotions acknowledged	Fear	Anxiety Technostress	Anger, Fear, Frustration, Sadness
Behavioural manifestations	Passive: withdrawal	Passive: non use	Active: covert and overt attacks to technology
Underlying assumptions	Jobs as material resources Extrinsic view of DT: replace human labour	Jobs as tasks to be fulfilled Technology as neutral artifacts that aid in task pursuit	Jobs as a source of nonmaterial resources: self-esteem, social recognition and relations. DT as disciplining devices and substitutes for co-workers
Studies	Agnes (2022); Arias-Perez and Vélez-Jaramillo (2022); Bhattacharyya (2023); Brougham and Haar (2020); Chigbu and Nekhwevha (2021); Ding (2021); Dwivedi et al. (2017); Granulo et al. (2019); Hampel et al. (2021); Ivanov et al. (2021); Jacob et al. (2023); Kim et al. (2022); Koo et al. (2021); Goethals and Ziegelmayer (2020); Li (2023); Molino et al. (2021); Nazareno and Schiff (2021); Papadopoulos et al. (2022); Presbitero and Teng-Calleja (2022); Priyadarshi and Premchandran (2022); Stieglitz et al. (2023); Toshav-Eichner and Bareket-Bojmel (2021); Vorobeva et al. (2022); Xu et al. (2023)	Birkel et al. (2019); Costin et al. (2012); Cranefield et al. (2023); Frick et al. (2021); Flechsig et al. (2022); Jang et al. (2023); Kar et al. (2021); Kim and Kankanhalli (2009); Lambrechts et al. (2021); Ligarski et al. (2021); Malik et al. (2022); Mete and Eyel (2021); Nnaji and Karakhan (2020); Pfeiffer (2016); Shahbaz et al. (2019); Shahbaz et al. (2021); Shirish and Batuekueno (2021); Sholler (2020); Song (2021); Szalavetz (2022); Vallas (1998)	Arat and Waring (2022); Carvalho et al. (2022); Hornung and Smolnik (2022); Klimkeit and Reihlen (2022); Lammi, (2021); Lu et al. (2020); Mayer and Velkova (2023); Meissner et al. (2021); Mirbabaie et al. (2022); Mosseri et al (2023); Newlands (2021); Plantin (2021); Qadri and D'Ignazio (2022); Schein and Rauschnabel (2021); Schneider and Sting (2019); Strich et al. (2021); Van Oort, (2019); Wu et al. (2023)

1.4.2 Resistance as a reaction to anticipated job loss

This stream conceptualizes resistance as a reaction to anticipated job loss (Brougham and Haar, 2020). Indeed, one of the most frequently invoked reasons for employee resistance is the perception of job insecurity (Chigbu and Nekhwevha, 2021; Frick et al., 2021; Hampel et al., 2021; Koo et al., 2021; Song, 2021). This account underlies that DT threatens the material resources of workers (Hornung and Smolnik, 2022; Li, 2023; Toshav-Eichner and Bareket-Bojmel, 2022), be them low-paid jobs and low-skilled workers or highly qualified, white-collar employees (Vorobeva et al., 2022). Such perceived threat activates feelings of fear of uncertainty in employees (Ågnes, 2022; Brougham and Haar, 2020; Li, 2023; Toshav-Eichner and Bareket-Bojmel, 2022; Vorobeva et al., 2022). Additionally, it activates suspicion and distrust (Ågnes, 2022), because employees feel that their psychological contract has been violated (Toshav-Eichner and Bareket-Bojmel, 2022; Hampel et al., 2021; Song, 2021). Finally, this stream shows that resistance manifests in passive forms such as withdrawal (Brougham and Haar, 2020; Koo et al.,2021; Klimkeit and Reihlane, 2022), namely, decreased job involvement, higher turnover intention or lower performance (Hornung and Smolnik, 2022; Li, 2023; Toshav-Eichner and Bareket-Bojmel, 2022).

1.4.3 Resistance as worker-technology misalignment

The second perspective draws from adoption theories such as the Technology Acceptance Model (Davis, 1989; Davis and Venkatesh, 1996) or the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003). Status quo scholarship (Samuelson and Zeckhauser, 1988) also informs this approach. This perspective conceptualizes resistance as non-use or reluctance to use DT that results from functional barriers interpreted as misalignments between employee skills, technology, and existing, routinized practices. Employees' lack of skills is posited as the main reason for employee reluctance use DT (Mete and Eyel, 2021; Nnaji and Karakhan, 2020; Szalavetz, 2022; Jacob et al., 2023). This takes form of active resistance simply by returning to the old ways instead of using these novel technologies (Szalavetz, 2022; Jacob et al., 2023). This scholarship implicitly depicts DT as neutral artifacts, rationally assessed in terms of functional judgments of usefulness and ease of use. Some studies also link the skill gap with anticipated job loss, as

they acknowledge that employees perceive that their expertise and skills will be rendered obsolete by DT (Pfeiffer, 2016; Mayer and Velkova, 2023; Schneider and Sting, 2020). This misalignment leads to technostress, or the stress/anxiety generated by the requirement for employees to improve their skills to use the technologies (Birkel et al., 2019 Lu et al., 2020; Nnaji and Karakhan, 2020; Papadopoulos et al., 2022; Szalavetz, 2022). This anxiety is heightened when they think that co-workers have superior technological skills because, if they are not able to upskill or reskill, they may be displaced (Chigbu and Nekhwevha, 2021). Additionally, employees may experience fear since their perceived inability to change their routines and practices (Nnaji and Karakhan, 2020; Flechsig et al., 2022) or acquire new skills and knowledge (Szalavetz 2022; Ligarski et al., 2021) negatively impact their present (or future) employability.

In addition, employees' lack of skills is also posited to cause a discrepancy between the capabilities of the technology and the expectations or needs of the individual (Ågnes, 2022; Strich et al., 2021; Toshav-Eichner and Bareket-Bojmel, 2022). Indeed, employees view these technologies as unreliable (Chigbu and Nekhwevha, 2021; Ding, 2021; Nazareno and Schiff, 2021) or as otherwise failing to meet their expectations (Chigbu and Nekhwevha, 2021; Ding, 2021; Fischer and Riedl, 2022; Szalavetz 2022); thus, for employees these technologies may be valueless. In sum, according to this perspective, resistance emerges when judgements of usefulness and ease-to- use DT are negative, which is attributed to workers' lack of skills to understand and use these technologies. These judgments activate feelings of fear, stress or anxiety. Resistance manifests in non-use or passive resistance: employees intend not to use the technology or go back to the "old ways of doing" (Marakas and Hornik, 1996, p.210).

1.4.4 Resistance as a reaction to eroded identities and social relations

The third perspective understands resistance as a reaction to losses in perceived identity or social relations. This approach emphasizes that digital technologies not only affect task pursuit but also negatively impinge on employee recognition and validation by reducing their power (Koo et al., 2021; Qadri and D'Ignazio, 2022; Van Oort, 2019), they fundamentally change professional roles and work culture (Lammi, 2021; Li, 2023; Schneider and Sting, 2020). Resistance emerges because employees believe that the introduction of these

technologies reduces their power and autonomy within the organisation (Koo et al., 2021). Employees perceive that their decision-making is curtailed and that their agency is restrained (Hampel et al., 2021; Koo et al., 2021; Mosseri et al., 2023), as they cannot make independent decisions or have the autonomy to continue to work in their accustomed manner (Lammi, 2021; Molino et al., 2021; Mirbabaie et al., 2022) DT technologies are not perceived as inanimate tools under human control; rather, they are viewed as intelligent (Cranefield et al., 2023) and autonomous agencies that can make decisions for humans (Cranefield et al., 2023; Strich et al., 2021; Newlands, 2021). Moreover, employees perceive that they lose control over processes and outputs since technologies become producers (Lammi, 2021; Pfeiffer, 2016). This perceived autonomy loss is more evident with the introduction of surveillance technologies that monitor how workers perform their tasks and their performance. The use of video surveillance, which even entails monitoring the micromovements of workers and extracting subjective information about employees (Nazareno and Schiff, 2021; Mosseri et al., 2023; van Oort, 2019), curtails their freedom (Flechsig et al., 2022).

A second group of studies in this perspective shows that DT technologies negatively affect workers' professional identity (Hampel et al., 2021; Lu et al., 2020; Mirbabaie et al., 2022; Schneider and Sting, 2020; Klimkeit and Reihlen, 2022), as these technologies change organizational or professional roles, often diminishing their value. For example, according to Schneider and Sting (2020), before the introduction of novel technologies, some employees conceptualized their professional identity in terms of being "a creative thinker" or a "freelance artist." However, with the introduction of technology, their perceived professional identity changed: their new work tasks were not consistent with creativity, leading to an erosion of their perceived professional identity. In other cases, the introduction of these technologies may render workers' roles obsolete (Pfeiffer, 2016; Schneider and Sting, 2020; Klimkeit and Reihlen, 2022). This shift, in turn, devalues the workers' identity: since one's professional identity is built on one's knowledge and skills (Chigbu and Nekhwevha, 2021; Klimkeit and Reihlen, 2022), when this knowledge becomes less necessary or is overridden by technologies, employees perceive that their esteem or status diminishes. As some studies report, employees acknowledge experiencing disappointment because "old-established, decades-surviving dexterities are less and less appreciated and needed" (Schneider and Sting, 2020, p.419). This devaluation is heightened when digital technologies extract from employees the

tacit knowledge of employees that is the basis of their role and, consequently, of their social status and esteem (Schneider and Sting, 2020).

Finally, studies highlight the disappearance of teamwork and personal relations in the workplace following the introduction of DT (Carvalho *et al.,* 2022; Goethals and Ziegelmayer, 2022; Ivanov et al., 2020; Lammi, 2021) as a reason for resistance. These technologies hamper workers' opportunity to socialize in the workplace (Nazareno and Schiff, 2021, Mayer and Velkova, 2023; Van Oort, 2019), and jeopardize teamwork since workers work with technologies, isolated from their colleagues (Lammi, 2021; Schneider and Sting, 2020; Mayer and Velkova, 2023). Studies conducted from this perspective emphasize the negative emotional experiences of employees, notably fear (Dwivedi et al., 2017; Jacob et al., 2023; Ligarski et al., 2021), anger (Granulo et al., 2019; Hornung and Smolnik, 2022; Lammi, 2021; Schneider and Sting, 2020, Song, 2021) and frustration (Ågnes, 2022; Ding, 2021; Hornung and Smolnik, 2022; Lu et al., 2020). The perceived loss of power, identity and relations may even lead to acute levels of suffering among employees, including suicidal thoughts (Hornung and Smolnik, 2022). Studies in this stream show broaden the resistant actions identified in the previous two perspectives: resistance manifest as overt, active forms as sabotage or cyberloafing (Mumby et al., 2017; Thanem and Elraz, 2022), voicing discontent (Mumby et al., 2017) or ridiculing technologies (Ackroyd and Thompson, 1999), or as covert or disguised resistance actions while manipulating technology (Knights and McCabe, 1998; Newlands, 2021).

1.4.5 Limitations of these perspectives

Despite considerable progress in understanding resistance, these perspectives offer partial conceptualizations of employee resistance to digital transformations. Moreover, several assumptions hinder the quest for a comprehensive understanding of resistance and "resistors". First, the first and second perspectives implicitly understand jobs as a source of material resources (e.g., remuneration), overlooking that jobs provide other immaterial or symbolic resources such as workers' recognition (Arat and Waring, 2022). Indeed, work holds a much broader meaning for individuals, such as satisfying personal aspirations or interests and enabling social relations (Le Lay and Lemozy, 2023). Evidence that jobs are more than a

source of income is found in the famous “lottery question” studies showing that individuals would continue working despite winning the lottery (Anuradha et al., 2014).

The three perspectives also differ in their portrayal of technologies. The adoption theories used in the second perspective depict digital technologies as neutral tools for carrying out work tasks, foregrounding their advantages like efficiency and productivity gains (Talke and Heidenreich, 2014). This portrayal overlooks that technologies may substitute employees or even managers as they make decisions for employees or monitoring performance and reporting it back to management (Malik et al., 2022; Schneider and Sting, 2020; Mosseri et al., 2023). In contrast, the first perspective portrays technologies as job robbers, whereas the third perspective emphasizes the disciplining role of technology (Malik et al., 2022; Sholler, 2020; Mosseri et al., 2023). Because the account of resistance provided by each stream is intrinsically tied to one of these functions, the explanation provided by each stream does not hold when one considers other functions of technologies.

The three perspectives also differ in the evaluation process attributed to employees. Whereas in the second perspective, employees are assumed to rationally assess DT, the first and third stream depicts a more emotional decision-making process, with fear and anger playing a crucial role. In sum, none of the perspectives provide a complete explanation of why resistance emerges and how it manifests. A conceptual integration that can account for the different judgments of technology, emotions and behavioral manifestations of resistance is warranted, as explained next.

1.5 Resistance as a response to perceived threats: an integrated framework of employee resistance to digital technologies

As explained above, extant conceptualizations offer a partial understanding of employee resistance to digital technologies. Bridging these three streams would provide a unified and cogent theorization that explains both active and passive resistance and accounts for the distinct functions of DT. Further, the proposed conceptualization not only integrates these three streams, but it also reconfigures extant studies into a new light (MacInnis, 2011), as it enables two shifts in research focus. First, we shift from seeing jobs as a source of material

resources to depicting jobs as sources of other resources such as social recognition or personal growth (Arat and Waring, 2022). Second, and consistent with employees' judgements (Lammi, 2021; Schneider and Sting, 2020), we shift from seeing technology as a neutral tool that helps carry out work tasks, to portraying it as an agentic group able to perform other functions (substituting, complementing, disciplining/surveilling, and replacing coworkers). By shifting our understanding of how employees give meanings to their jobs and how DT would affect them, we can uncover the fuzzy and complex nature of resistance.

Based on these assumptions, we propose to study resistance as a form of social conflict. Intergroup conflict theories are appropriate as backbones of resistance because they align with the employees' perception of digital technologies as a powerful outgroup that, because of its various functions, competes with humans over scarce resources (Huang and Rust, 2018; Vanman and Kappas, 2019). Specifically, we draw from Intergroup Threat Theory to provide an overarching explanation of resistance to digital technologies.

Intergroup threat theory was developed to explain prejudice and animosity against outgroups. This theory originated in social psychology and is based on social identity theory (Ashforth and Mael, 1989; Riek et al., 2006; Stephan et al., 2016) which postulates that an individual's social identity is established by the groups to which that person belongs (Worchel et al., 1998). Employees also build their identities on their professional roles and social groups (Pratt et al., 2006). A central assumption of this theory is that individuals view their own group as positively distinct from other outgroups (Huang et al., 2021). Social conflicts are then said to occur when outgroups are perceived as threats (Stephan et al., 2016), so that ingroups respond by derogating, attacking, or distancing themselves from the outgroup (Fasce et al., 2023).

A group tends to perceive the outgroup as a menace when they believe that their own resources or worldviews are jeopardized (Tausch et al., 2009). The threats posed by outgroups can be categorized into two dimensions. First, threats can be divided into realistic threats (i.e., those targeting the group's power or economic resources) and symbolic threats (i.e., those targeting the group's values, norms, or worldview). Both types of threats potentially harm the ingroup insofar as they imply a resource loss, whether material or socio-cultural. Second,

threats can be individual or collective. An individual threat affects only the individual herself, such as her personal security or job. In contrast, collective threats entail a threat to the group, such as a threat to the human identity or uniqueness of the group (Stephan *et al*., 2016).

These perceived threats elicit a variety of negative emotions, such as anger, fear, and disgust (Landmann et al., 2019; Stephan et al., 2016), insofar as the threatening outgroup is viewed as thwarting individual or collective well-being (Landmann et al., 2019). Although intergroup threat theory acknowledges that perceived threats mobilize emotions, the specific links between appraisals of threat and the emotions experienced have not yet been systematically examined. However, appraisal-based approaches to emotions have demonstrated that emotion(s) depend not only on the perceived threat but also on the assessment of control and the certainty of acting upon such threat (Lazarus, 1991; Lerner et al., 2015). For instance, both anger and fear are negative emotions elicited by contexts that are perceived as impediments to one's goals; however, anger is associated with appraisals of high certainty and control over the impediment, while fear is associated with appraisals of low certainty and control (Lerner et al., 2015).

These emotions, in turn, condition the behaviour of individuals as they motivate the individual to protect the ingroup when confronted with a threatening outgroup (Hodson and Costello, 2007; Stephan et al., 2009; Stephan and Stephan, 2017). Specific emotions stimulate distinct behavioural dispositions or action tendencies (Frijda, 2007). To illustrate this point, fear is often associated with withdrawal or submissive behaviours, whereas anger usually motivates attacks (Frijda, 2007). Because the actions taken against the outgroup are motivated by the specific emotions experienced towards that outgroup, emotions are proposed as a mediating mechanism in responses to threats. Specific threat appraisals will activate specific discrete emotions and this in turn will orient individuals to a given action tendency consistent with the cognitive content of the emotion experienced.

Intergroup threat theory provides the foundational axioms for the conceptualization of resistance to digital transformation. We defend that workers' relationships with digital technologies are similar to intergroup relations (Huang and Rust, 2018; Vanman and Kappas, 2019). Because employees perceive that they are in competition with these technologies, they

may evaluate such technologies as a potential threat to their material or intangible resources (Huang and Rust, 2018; Yogeeswaran et al., 2016; Vanman and Kappas, 2019), insofar as technologies replace and/or control humans (Kellogg et al., 2020; Modliński et al., 2023), erode their identities and social relations, and work more effectively than humans (Huang et al., 2021; Yogeeswaran et al., 2016; Złotowski et al., 2015, 2017).

Interpreting previous studies from ITT, we conceptualize employee resistance as a social conflict process that features three components: a judgement of a threat, an emotion generated by this judgement, and a behavioural response elicited by this emotion. Employee resistance to digital transformation emerges when workers judge that these technologies pose a threat to their material resources, such as their present or future employability, or to their intangible or sociocultural resources, such as their professional identity. Depending on the perceived threat and the perceptions of control, different emotions are mobilized. In turn, these emotions guide action, leading employees to engage in passive resistance (non-use) or active resistance (sabotaging or boycotting technology).

To explain how these three components combine to explain resistance, we delineate four pathways of resistance: *burdening*, *diminishing*, *disempowering*, and *isolating*. The four pathways of resistance were derived through an analysis of theoretical foundations and empirical evidence from the reviewed studies. Specifically, the pathways emerged by identifying patterns in how these components shape resistance. This process involved synthesizing existing literature, identifying recurring mechanisms, and mapping these onto distinct resistance pathways. Additionally, the pathways were validated through the qualitative and/or quantitative methodologies employed in the studies. These pathways are analytical abstractions based on previous studies, although they may coexist in the lived experience of workers. Moreover, they do not exhaust the possible pathways of resistance; rather, they are offered as examples of how resistance may unfold. The four pathways are distinguished on the basis of the function played by DT, the resource being threatened and the emotions and forms of resistance that such perceptions generate (Oreg et al., 2018). The proposed pathways serve multiple purposes. First the distinct proposed pathways provide a nuanced understanding of the various dimensions of employee resistance to technology adoption. This will help organizations to identify specific concerns and challenges faced by

employees. Further, organizations may use these proposed pathways to tailor their approaches to technology adoption, thereby promoting smoother transitions.

i) Burdening Pathway

This pathway of resistance occurs when employees judge that digital technologies will replace them. Accordingly, technology functions as substitution thus they are lived as a burden to the employee. Such replacement poses a material threat or threat to their source of income by jeopardizing their present and future employability. Employees perceive themselves "deskilled" (Pfeiffer, 2016; Plantin, 2021; Koo *et al*., 2021) and thus experience uncertainty concerning their present employability (a possible layoff), which may also be transposed to the future (difficulties finding a job or accessing jobs with worse working conditions).

Appraisals of future uncertainty (Nazareno and Schiff, 2021; Toshav-Eichner and Bareket-Bojmel, 2022; Vorobeva *et al*., 2022) generate fear. Workers also fear that they will be required to strive to emulate robots, i.e., exemplary model workers who never become sick or take vacation time (Ågnes, 2022; Molino et al., 2021), and that their work will become a robotic experience featuring even more demanding requirements (Mete and Eyel, 2021). Fear may co-arise with anxiety or "technostress" (Fleischer and Wanckel, 2023; Malik et al., 2022; Meissner et al., 2021), the negative emotions arising from employees' perceived inadequacy with respect to these technologies. In turn, such technostress also has secondary adverse outcomes, such as increased difficulty concentrating and paying attention (Lu et al., 2020; Meissner et al., 2021). This situation leads to a vicious cycle of negative emotions that makes it burdensome for employees to learn new skills.

Passive resistance is the most common behavioral manifestation observed in this pathway, as studies report consequences such as greater turnover intention, higher absenteeism, and withdrawal states such as decreased commitment at work (Brougham and Haar, 2020; Koo et al., 2021; Nazareno and Schiff, 2021; Priyadarshi and Premchandran, 2022). Further, employees may also resist this (re)upskilling process because it demands cognitive resources and is viewed as a "burden", heightening their stress.

ii) Diminishing Pathway

The diminishing pathway occurs when employees perceive a threat to their work performance. Here the function of the technology is threat to their productivity since it diminishes the work performance. Employees have to work with these technologies that are nonetheless appraised as an obstacle to task pursuit, as they decrease the quality of their work or their productivity (Chigbu and Nekhwevha, 2021; Ding, 2021; Nazareno and Schiff, 2021) and are deemed as valueless or suboptimal compared to previously used routines or procedures (Ågnes, 2022; Ding, 2021; Lammi, 2021; Ligarski *et al.,* 2021). A limited performance would, in turn, compromise workers' professional prestige impinging negatively on their salary; moreover, sustained reduced performance can motivate redundancies. For this, this path represents a primary threat to material resources and secondary to immaterial resources such as self-esteem.

This perceived threat generates emotions such as frustration and dissatisfaction (Ågnes, 2022; Chigbu and Nekhwevha, 2021; Hornung and Smolnik, 2022; Jacob et al., 2023; Lu et al., 2020; Klimkeit and Reihlen, 2022). These emotions are typically experienced when workers view technologies as impediments to their goals and appraise the situation as unfair or illegitimate but are nevertheless forced to continue using such technologies (González-Gómez and Hudson, 2023). Strong and sustained frustration becomes a psychosocial work stressor (Schneider and Sting, 2020), resulting in emotional exhaustion and increased overall distress (Presbitero and Teng-Calleja, 2022). Frustration may lead to withdrawal or aggression (González-Gómez and Hudson, 2023). Depending on the organisational context, employees may underutilize such technologies (Shahbaz et al., 2021) or voice discontent about a specific technology (Arias-Pérez and Vélez-Jaramillo, 2022; Chigbu and Nekhwevha, 2021; Schneider and Sting, 2020).

iii) Disempowering Pathway

This pathway originates in appraisals of digital technologies as a threat to employee agency or identity, jeopardizing symbolic resources such as self-esteem or social status. This path is linked to the disciplining/surveillance function of DT: workers perceive these DT as powerful superhuman machines depriving workers of their human uniqueness and their

freedom, since such technologies make decisions that supersede those of humans (Toshav-Eichner and Bareket-Bojmel, 2022). This is the case of AI or algorithms that are perceived as autonomous decision-makers (Hampel et al., 2021; Mayer and Velkova, 2023; Song, 2021; Stieglitz et al., 2023; Wu et al., 2023) thus reducing employees' power in the workplace. Since AI makes decisions for employees, it erodes workers' skills and expertise, leading to a devaluation of their professional identity (Chigbu and Nekhwevha, 2021; Kim et al., 2022; Mayer and Velkova, 2023; Pfeiffer, 2016; Strich et al., 2021; Stieglitz et al., 2023).

A similar threat is perceived in the context of surveillance technologies that not only continually monitor employee behavior and performance (Hornung and Smolnik, 2022; Lammi, 2021; Nazareno and Schiff, 2021; Newlands, 2021; Qadri and D'Ignazio, 2022; Schneider and Sting, 2020) but also extract employees' tacit, situated knowledge (Nazareno and Schiff, 2021; van Oort, 2019) thus depriving them of the resources on which their status is based. Likewise, several studies show that workers view their professional identity and their personal distinctiveness as being threatened (Hampel et al., 2021; Lu et al., 2020; Mirbabaie et al., 2022; Mayer and Velkova, 2023; Mosseri et al., 2023; Schneider and Sting, 2020) which leads to a loss of professional recognition and perceived power (Lammi, 2021; Mirbabaie et al., 2022; Stieglitz et al., 2023). This disidentification with one's professional identity can spill over to the organization: a separation between the employee's identity and the occupational identity and its values (Mirbabaie et al., 2022; Schneider and Sting, 2020; Strich et al., 2021; Stieglitz et al., 2023) leads to decreased commitment in the workplace (Strich et al., 2021; Van Oort, 2019)

This perception of powerlessness generates emotions of anger or fear. Anger occurs when employees perceive that they can revert or cope with the threat that these technologies pose (Ding, 2021; Hampel et al., 2021). The motivational goal of anger is to eliminate harm (Smith and Ellsworth, 1985); thus, anger is implicated in responses featuring overt resistance, such as protests (Newlands, 2021; Qadri and D'Ignazio, 2022). Other resistance-related actions driven by anger aim at rectifying the perceived power imbalance, namely by manipulating technologies to outsmart AI systems (Qadri and D'Ignazio, 2022; Schneider and Sting, 2020; Strich et al., 2021). For instance, employees may engage in "time stealing" by clocking in before starting actual work (Van Oort, 2019; Qadri and D'Ignazio, 2022), thus

increasing their paid hours. With these mundane forms of resistance, workers intend to restore their lost resources.

In contrast, fear is experienced when workers anticipate a potential devaluation of their position but have limited control and ability to change the situation (Molino et al., 2021; Vorobeva et al., 2022). Because the motivational goal of fear is to escape harm (Frijda et al., 1989), fear is more likely to drive covert forms of resistance, such as "pulling the plug" (Newlands, 2021; Sholler, 2020; Van Oort, 2019).

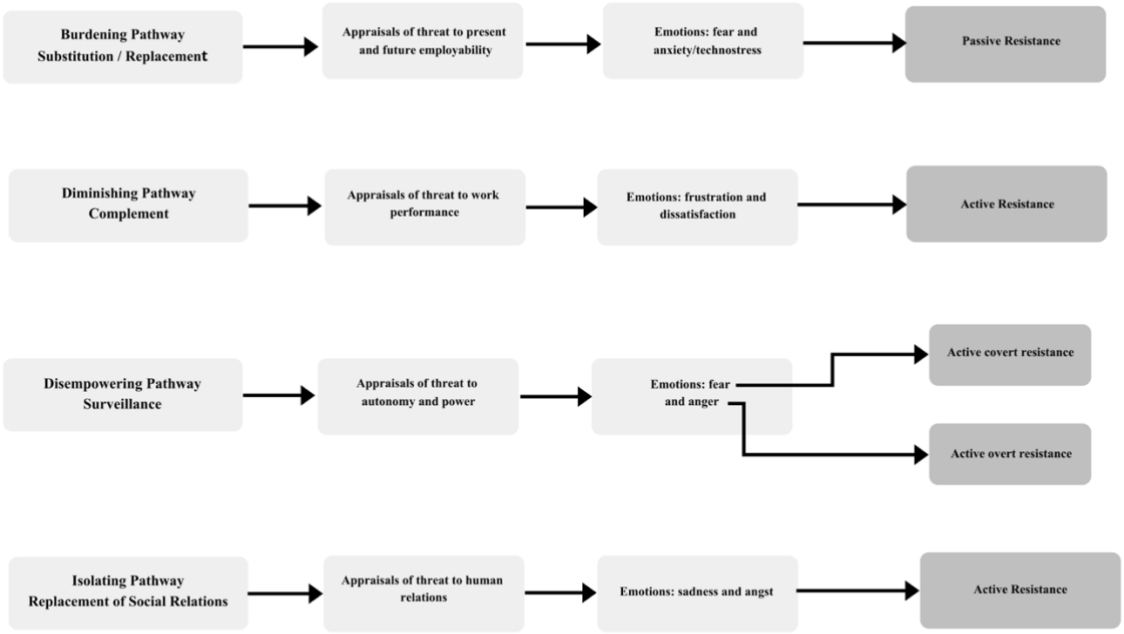
iv) Isolating Pathway

This pathway originates in appraisals of technologies as a threat to human relations in the workplace, impinging negatively on immaterial resources of employees (Carvalho et al., 2022; Lammi, 2021; Schneider and Sting, 2020). Here, this pathway is associated with replacing peers, as employees report that the introduction of digital technologies erodes socialisation, teamwork and even experience sharing (Lammi, 2021; Papadopoulos et al., 2022; Pfeiffer, 2016; Plantin, 2021). This threat is more likely to occur following the introduction of robotisation or automatization when co-workers are replaced by cobots (Birkel et al., 2019; Hornung and Smolnik, 2022; Lammi, 2021; Schneider and Sting, 2020). As teamwork is displaced, employees lose opportunities for communication and mundane emotional sharing with peers (Hornung and Smolnik, 2022; Lammi, 2021; Schneider and Sting, 2020). This limited socialization is accompanied by perceptions of depersonalization in the workplace (Lu et al., 2020).

The perceived isolation generates emotions such as sadness or angst (Carvalho et al., 2022; Granulo et al., 2019; Hornung and Smolnik, 2022; Papadopoulos et al., 2022; Pillai et al., 2023). In fact, this situation may even lead to depression, which can potentially spillover into employees' private lives (Malik et al., 2022; Nazareno and Schiff, 2021; Presbitero and Teng-Calleja, 2022). Resistance to isolation takes the form of actions aimed at regaining companionship and socialization, such as creating WhatsApp groups to voice discontent or share insights about technology 'hacks' (Newlands, 2021; Plantin, 2021; Qadri and D'Ignazio, 2022), convince other colleagues of the technology's deficiencies (Sholler, 2020) or transgress

rules concerning the number and length of breaks (Plantin, 2021; Van Oort, 2019). Furthermore, other studies show that employees withhold important information about technologies from engineers to persuade managers of the deficiencies of these technologies and the benefits of restoring teamwork (Arias-Pérez and Vélez-Jaramillo, 2022; Lammi, 2021). Finally, colleagues who support digital transformation processes may be humiliated or harassed by employees (Arias-Pérez and Vélez-Jaramillo, 2022; Song, 2021).

Figure 1-4 Pathways



1.6 Conclusion

This chapter has reviewed extant studies about the antecedents and consequences of employee resistance to digital technologies. As we have shown, extant perspectives are fragmented, each offering a partial explanation of the phenomenon. This fragmentation is largely due to underlying assumptions about the resources that jobs provide and the functions that digital technologies may play. Our model integrates these perspectives offering a holistic conceptualization of resistance. Moreover, we offer a revised perspective on the reasons for

resistance by reevaluating the notion of job significance to employees and by differentiating the functions that digital technologies may play. Dominant paradigms see jobs as sources of financial income or as means to fulfill economic needs; we expand this notion by focusing on other non-monetary aspects of jobs. Simultaneously, we consider four functions of technologies: as substitution for employees, as complements or aids for workers, as disciplining/surveilling devices or as replacers of peers. Conceptualizing resistance as a reaction to the perceived threats to material and intangible resources of employees as a result of the function of technologies allows integrating past studies into an overarching parsimonious framework. This integrative framework serves as a promising theoretical reference for studying human-technology interactions as it enhances the theoretical depth of resistance to digital technologies. By specifying the relationships between threat types, emotions and resistant actions, this expanded view captures resistance within organizations, moving beyond the narrow focus on job loss.

In sum, the chapter proposes a reconceptualization of resistance, presenting a three-stage model drawing from social conflict theories. It also outlines four potential pathways for resistance, offering a holistic understanding of the dynamics between employees and digital transformations in modern workplaces. Having explained the notion of resistance to digital transformation, the next chapter dives more deeply into the challenges of organizational change and investigates the strategies that can be employed to lessen resistance. The framework outlined in this chapter foregrounds the role of emotions as key underlying psychological process in employee resistance. However, as will be explained in detail in Chapter 2, despite the key role that emotions play in activating resistance, scholarship has overlooked the strategies that abate or appease these emotions. We redress this gap in chapter 2 by examining whether interpersonal emotion regulation strategies may help to reduce employee resistance for the above-mentioned pathways. Chapter 2 involves a qualitative case analysis focusing on two companies with a focus on management and their IER strategies regarding resistance to robotization.

Chapter 2 NAVIGATING THE TERRAIN OF RESISTANT EMOTIONS - A TALE OF TWO COMPANIES

2.1 Introduction

The previous chapter offered a reconceptualization of resistance as a three-staged process. Drawing from social conflict theories, it outlined four potential pathways whereby resistance to digital transformation may unfold in organizations. Chapter 2 examines the specific challenges of organizational change, uncovering the strategies that can be employed to mitigate resistance. I offer a critique of the strategies dominantly discussed to stall resistance (upskilling and reskilling) as ineffective because they do not tackle the emotional bases of resistance. I then propose that interpersonal emotional strategies may be more effective to attenuate resistance among employees. Two case studies helped unveil the different interpersonal emotional strategies used by two firms with distinct consequences on employee resistance.

As explained in chapter 1, extant literature understates the importance of emotions as fundamental mechanisms in explaining employee resistance to digital transformation. Undoubtedly, emotions play a crucial role in shaping employee behavior and attitudes toward organizational change. Emotions are a critical psychological factor that can hinder employees' energy and motivation to adapt to change. Therefore, addressing the resistant emotions is crucial to enable organizational transformation. Indeed, in their recent seminal work, Oreg and Michel (2023) highlighted a critical gap in existing scholarship, noting the scant attention devoted to emotion regulation theories in the study of organizational change. My thesis serves as a direct response to this critical gap by examining interpersonal emotion regulation (IER hereafter) within the context of organizational change in the domain of robotization.

IER refers to the numerous methods by which individuals can affect others' emotional experiences in social interactions (Zaki, 2020). IER strategies may play an important role in attenuating resistance in employees. Bridging the study of emotion regulation and

resistance—two concepts that have been widely examined but have not been comprehensively integrated—can enhance and expand comprehension of how IER may attenuate resistance at the workplace. This study aims to answer the following research question: *What strategies are employed by management to regulate others' emotions in the interactions at the workplace in the context of robotization?* I start this chapter with a literature review. Firstly, I talk about the strategies that have been implemented so far at organizations and will explicate why they may not be sufficient to overcome resistance according to the pathways elaborated in chapter 1. Then, I will discuss emotions and interpersonal emotion regulation strategies and why these strategies may be appropriate to attenuate resistance. Then moving onto the method section and the findings contrasting the two cases. Finally, I present the findings through integrating the pathways elaborated in chapter 1 with the strategies that each company employed.

2.2 Conceptual Framework

The review described in chapter 1 showed that the strategies to overcome employee resistance have been less studied since most research have focused on explaining the antecedents of resistance. Yet, when they are discussed, they are usually reduced to two strategies: upskilling/reskilling of the workforce and lifelong learning. Indeed, even the European Commission mentioned that the digital transition requires measures that focus on upskilling, reskilling and lifelong learning (Lang and Triantoro, 2022). Yet, these strategies may not adequately address all the pathways of resistance, since resistance occurs for different reasons than lack of training, as the pathways outlined in chapter 1 showed. Further, they also assume that fear is the main reason for resistance and thus these strategies overlook other potential appraisals of digital transformation and the emotions that these appraisals activate. I will now further elucidate on the different strategies that organizations implement with the aim of attenuating resistance.

As aforementioned, a common strategy in the change management and IS scholarship that has been implemented at organizations is upskilling/reskilling of the workforce. Upskilling, reskilling involves training the workforce so that they can work with the novel technologies. Indeed, management proposes addressing resistance by investing in upskilling

or reskilling (Jaiswal et al., 2022) or by training workers (Kraus et al., 2023). However, as the burdening pathway described in chapter 1 shows, upskilling programs may not prevent resistance entirely. The reason is that employees may also resist this (re)upskilling process because it demands cognitive resources and is viewed as a "burden" (Horvath and Szabo, 2019), heightening their stress.

Another strategy that has been suggested is lifelong learning which encompasses inspiring employees to embrace difficult situations, even those that involve risks (Neves, 2011), by providing support and encouragement from supervisors. For example, this strategy may adequately resolve the isolating pathway as it will strengthen the relationship between management and employees. Yet, even if the company provides strong organizational support this may not necessarily reduce resistance in the case of the *diminishing pathway*, where resistance is due to perceived or actual decreased work quality resulting from the novel technology. Despite organizational support, if workers feel that the technology impedes them rather than helps them, employees may still resist the change. Therefore, it is imperative for management to proactively address these concerns by providing opportunities for employees to provide feedback regarding the technologies which in turn would improve the specific technology.

Transparent communication is another key strategy for reducing resistance in extant scholarship. Providing employees with information about change initiatives and ensuring their comprehension can enhance their openness to change (Wanberg and Banas, 2000; Struijk et al., 2023). Yet, this may not always suffice to attenuate rejection, particularly if individuals feel that the technology threatens human relations in the workplace, as demonstrated by the *isolating pathway*. When employees perceive that the implementation of technological advancements will disrupt established personal relations or interpersonal connections, they may resist the change out of fear of isolation or alienation and greater transparency will not modify this appraisal.

Active employee participation, whether individual or in groups, has been shown to enhance readiness for change (Eby et al., 2000; Struijk et al., 2023). Involving employees in the change process not only reduces resistance but also enables them to gain new insights

and feedback as they engage in autonomy-driven behaviors (Coch and French, 1948; Wagner, 1994). Providing education and training to prepare employees for specific changes is also essential for overcoming resistance (Warrick, 2023). This participation should also be accompanied with ongoing attention towards employees and their appraisals of change. Further, Kotter (1996) advises top management to remain dedicated to the change vision and its urgency, while middle management and employees continue to work on specific projects necessary for the change. While employees may put forth effort to participate in the implementation of new technology, they may still experience resistance if this change threatens their sense of freedom or autonomy in the workplace as shown in the *disempowering pathway*. As aforementioned, such resistance may stem from worries about how the technology will change their roles, diminish their decision-making autonomy, thus makes them feel powerless. Feelings of powerlessness and negative emotions that accompany them can hinder employees from actively participating.

Another stream of literature within IS scholarship also puts the emphasis on specific cognitive strategies aimed at decreasing resistance in employees. As an example, Rezazade Mehrizi et al., (2021) emphasizes the importance of employing techniques like disrupting habits, cognitively distracting employees, and encouraging thoughtful consideration of the advantages of these new technologies in practice. Cognitive reframing is another mental approach where organizations should employ strategies to shape perceptions. This technique aims to ensure that narratives surrounding new technologies resonate with employees and are aligned with goals (Azad and Faraj, 2011; Clausen et al., 2024). For example, through the use of metaphors, slogans and persuasive storytelling that are aligned with the digital transformation efforts (Azad and Faraj, 2011; Clausen et al., 2024). Likewise, Schlichter and Kraemmergaard (2010) emphasize the importance of training users, adapting cognitive methods, and ensuring perceived relevance for a successful transformation. Overall, it can be stated that the cognitive aspects of individual adaptation are at the forefront of these strategies, shaping organizational readiness as a critical foundation for their effectiveness (Besson and Rowe, 2012).

Accordingly, the above-mentioned strategies may not effectively target all the pathways in which resistance may unfold. Further, they also do not target the pair appraisal-

emotion characteristic of resistance. Effective strategies must consider how individuals appraise and emotionally respond to technologies. Without addressing this critical interplay, interventions may not be effective as thought to be. Focusing on emotional management may be more promising for mitigating resilience, since by regulating emotions of employees, management can enhance the worker's ability to cope with robotization thus increasing adoption. We turn our attention next to this approach.

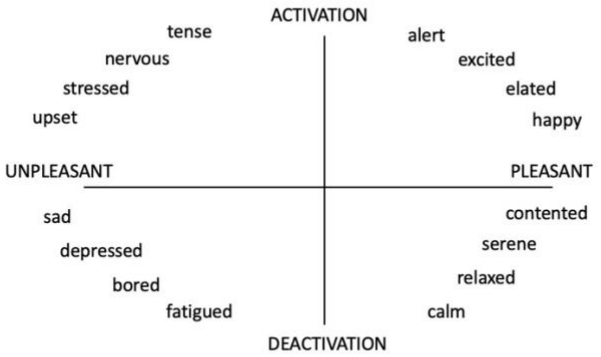
2.2.1 Emotions

Emotions have been described as reactions to environmental *stimuli* (Scherer and Moors, 2019), guiding our attention and priming us for action. Emotions are typically viewed as affective responses that arise when individuals encounter events, objects, or ideas and evaluate whether they support or impede their goals, beliefs, or well-being (Carver and Scheier, 2001; Huijts et al., 2022). They are often defined as affective and physiological states that manifest in behavioral reactions, and that can be distinguished by their cognitive content, intensity and positive or negative valence (Gross, 1998; Ochsner and Gross, 2005). To summarize, emotions are intense and powerful responses elicited by specific events or circumstances that individuals perceive as personally significant. (Baumeister et al., 2007; Lerner et al., 2015; Pham, 2007). Unlike moods, emotions are characterized by greater intensity and specificity and are also not related to a particular external elicitor (Beedie et al., 2005; Steinert and Roeser, 2020). The four essential aspects of emotions comprise cognitive appraisals, valence, arousal, and action tendencies (Lazarus, 1991; Pham, 2007; Roseman, 1991). Emotions concentrate on experiences that are relevant to achieving goals (Lazarus, 1991; Pham, 2007; Roseman, 1991). As a result, various emotions are consistently linked to specific objectives and are associated with particular cognitive evaluations or appraisals (Lazarus, 1991; Pham, 2007; Roseman, 1991).

The valence aspect of emotions pertains to the subjective feelings associated with them and is utilized to differentiate between positive and negative emotions (Lazarus, 1991; Pham, 2007; Roseman, 1991). Arousal refers to the immediate physiological response that is elicited by the individual's body to an emotion. Arousal typically is associated with level of excitement or perceived intensity of the emotion (Heller, 1993; Russell, 2003). Valence and

arousal are fundamental aspects of emotions. Affective states also differ when it comes to their valence and their degree of activation (Russell, 1980). According to the circumplex model (Figure 2-1) the valence and activation levels of employees' emotional states tend to align with the valence and activation levels of their behavioral responses (Russell, 1980). Emotions with a high degree of activation such as upset, stressed or excited play a vital role in shaping workplace behavior (Warr et al., 2014). This is also acknowledged by extant scholarship that affective experiences lead to action tendencies (Palmer, 2017). Therefore, emotional states motivate and prioritize actions of employees (Elfenbein, 2007).

Figure 2-1 Circumplex Model by Russell (1980)



Different emotions trigger specific action tendencies and behavioral responses (Frijda et al., 1989). Anger, for instance, is a typical reaction to a perceived threat. Research has shown that anger arises when faced with an obstacle that seems surmountable and is accompanied by a willingness to alter the circumstances (Frijda et al., 1989). This emotion is also associated with the desire to eliminate problematic elements and restore the situation to its previous state (Lerner and Tiedens, 2006). Additionally, researchers have observed that the action tendencies associated with negative emotional states aim to address existing issues in order to enhance the current situation (Elfenbein, 2007). Based on this, we can conclude that negative emotional states like feeling upset or stressed may lead to resistant behaviors in people, and that various emotions can trigger different behavioral responses.

Moreover, emotions emerge through processes of appraisals. Primary appraisals concentrate on the personal meanings that individual associates with an event and how it may impact her well-being (Folkmann et al., 1986). Typical question includes, what is at stake?. Secondary appraisals aim to address the question of what can be done in a given situation, by focusing on an individual's assessment of the resources and coping strategies that are available to them. For instance, secondary appraisals then encompass the ability to manage or deal with a particular situation, identifying the responsible parties for an event, the estimation of the necessary effort to address the event, and the determination of the level of certainty regarding the cause or nature of the situation (Roseman et al., 1990; Scherer, 2001; Smith and Ellsworth, 1985). Here individuals assess their coping options and thus also the emotion regulation takes place (Lowe and Bennett, 2003).

Emotion regulation refers to the process of regulating emotions that were elicited due to a particular event or environmental demand (Calkins 1994; Thompson 1994). Emotion regulation and coping are interconnected, as they both play a role in how individuals respond to *stimuli*. Specifically, emotion regulation encompasses determining the emotional impact of a situation and discerning the appropriate emotional reaction, as well as when and how to express those emotions (Gross, 2015). Acknowledging the relationship between the emotional impact and the subsequent emotional reaction is crucial especially at the workplace, as understanding this relationship can help in developing interventions aimed at improving emotional regulation through enhancing coping resources and perceived control. Emotion regulation was firstly conceptualized by Gross (1998) as the capacity to manage and adjust one's emotional reactions to achieve desired outcomes (Gross, 1998). In simpler terms, emotion regulation is described as "the process by which individuals control which emotions they experience, when they experience them, and how they express these emotions" (Gross, 1998, p. 275). Emotion Regulation (ER) involves purposefully influencing one's own or another's emotional journey through social interactions (Zaki and Williams, 2013). It also shares common ground with related processes such as the social sharing of emotion (Rimé, 2009) and seeking or providing support (Cohen and Wills, 1985).

Emotions can result in various cognitive and behavioral action tendencies (Frijda, 2010). These action tendencies refer to the inclination to act that arises in response to

emotional experiences (Scherer et al., 2001). Consequently, individuals behave in response to emotional stimuli which varies depending on the specific emotion being elicited (Frijda, 2010; Lazarus, 1991). Scholarship usually differentiates between approach and withdrawal behaviors (Maxwell and Davidson, 2007). For instance, anger is an approach emotion and may cause behaviors such as directly engaging with the target. In contrast, withdrawal refers to retreating and evading the object of the emotion. The action tendency carried out thus depends on the appraisals embedded in the emotion (Lerner and Keltner, 2000).

Research has concluded that emotions of the same valence may have different effects on action outcomes (Lerner and Keltner, 2000). For instance, fear or anxiety leads to more pessimistic outlooks and thus individuals engage in risk-averse choices (Lerner and Keltner, 2000). In contrast, anger is linked to appraisals of certainty and personal control (Lerner and Keltner, 2000), which in turn result in action tendencies that involve risk-seeking (Lerner and Keltner, 2000). Another example is the feeling of guilt which has the action tendency to include repair behavior, yet may also involve risk taking (Kouchaki et al., 2014).

In the workplace emotions such as guilt, frustration or other emotions play a crucial role as they shape the behaviors of employees. Understanding the intersection between emotions and organizational change is crucial, as emotions can drive adoption or resistance at the workplace. Given the ambiguity and uncertainty associated with change, many employees anticipate or perceive inconsistencies with their goals, leading to negative emotions such as anger, anxiety, and frustration (Baethge & Rigotti, 2013; Kiefer, 2005). Indeed, this has been demonstrated in the review presented in Chapter 1: several studies have shown that the introduction of novel technologies such as robotization triggered negative emotions among employees such as feelings of anxiousness, fear or worry. Likewise, the secondary appraisal process may intensify negative emotional responses as it focuses on the perceived control and adaptability of the situation (Frijda et al., 1989). Accordingly, the third stage would then lead to resistant behavior displayed at the workplace such as through covert or overt forms of resistance as explained in chapter 1. In sum, an organizational context such as organizational change brought by robotization consistently evokes varied emotional reactions, depended upon the diverse interpretations made by individual employees (Antonacopoulou and Gabriel, 2001).

Scholarship has noted that interactions with coworkers and supervisors stand out as the most influential source of emotion in the workplace (Sandelands and Boudens, 2000). It has been observed that individuals prioritize connections with others over maximizing their job performance, emphasizing the significance of interpersonal relationships (Sandelands and Boudens, 2000). Similarly, Waldron (2000) emphasized the pivotal role of relational dynamics in shaping emotions at work, asserting that interactions with coworkers have a greater impact on our emotional experiences than the tasks we perform. Waldron (2000) further contended that organizational relationships are particularly potent sources of intense emotion, underscoring the profound influence of interpersonal interactions on workplace emotions. It can be thus said that it is imperative to manage employee emotions when they directly impact significant objectives at the workplace. A burgeoning strategy enabling this emotion management is with interpersonal emotion regulation, as explained next.

2.2.2 Interpersonal Emotion Regulation

IER is defined as the intentional action of affecting someone else's emotional state (Zaki and Williams, 2013). IER is grounded on intrapersonal regulation emotion regulation (Gross, 1998) which refers to the capacity to manage and adjust emotional reactions to achieve desired outcomes. Yet what makes IER stand out is that here emotion regulation is done and with social interactions. Further, the term IER embodies the prominent characteristics observed in academic discussions of interpersonal regulation, as it signifies an active, deliberate, and goal-oriented process in which a person seeks to modify the emotional state of another individual (Zaki and Williams, 2013). Here a goal is pursued to fulfill other objectives such as enhancing relationships (Tamir, 2016) or manipulating others (López-Pérez et al., 2024). It is a controlled process (Niven et al., 2009) with the aim to change another person’s emotion (Dixon-Gordon et al., 2015).

Interpersonal emotion regulation (IER) begins when the regulating agent identifies and understands the emotions and mental state of others (Nozaki and Mikolajczak, 2020; Reeck et al., 2016). Empathy, in particular, is a crucial precursor to this process (Zaki, 2020), as supported by neuroscientific findings that show brain activation in regions linked to both

cognitive and affective empathy during IER (Hallam et al., 2014). Empathy involves two key components: cognitive empathy, such as perspective-taking (the ability to understand others' viewpoints), and affective empathy, including empathic concern (feelings of compassion toward others) (Zaki, 2020). These empathic responses—whether through experience-sharing, mentalizing, or concern—enable individuals to engage effectively in regulating others' emotions. Mentalizing, which involves inferring another person's thoughts or emotions, closely aligns with perspective-taking (Zaki, 2014). Therefore, empathy is central to IER, facilitating processes like understanding, forecasting, and regulating the emotions of others (Zaki, 2020).

IER involves the deliberate use of strategies to alter or influence the emotional states of others (Niven et al., 2009). According to Niven (2017), IER has four defining characteristics: (1) it is a regulatory process, (2) it targets an individual's affective state, (3) it is intentional, and (4) it is directed toward a recipient. This distinguishes IER from related concepts such as social support, interpersonal influence, prosocial behavior, and empathy. While these concepts often occur within social interactions and involve emotional dynamics, they do not always have a specific emotional regulation goal (Messina et al., 2021). For example, offering social support may provide comfort without actively seeking to modify the recipient's emotional state (Dixon-Gordon et al., 2015). In contrast, the primary objective of IER is to intentionally adjust or manage another person's emotions in a social context (Niven et al., 2009).

The most prominent models of IER are William's Model (2007) and Nivens et al's Model of IER (2007), which have been extensively cited in extant scholarship. These models will be discussed in the following sections.

a) Williams' Model of IER

Williams (2007) delineated four strategies for managing others' emotions: modifying the situation, altering cognition, deploying attention, and regulating the emotional response. The situation modification strategy is alike to the intrapersonal strategy defined by Gross (1998) which involves proactive measures that change a situation to alter its emotional effect.

In employing this strategy, the agent takes action to eliminate, adjust, or transform aspects of the situation or issue that are triggering undesirable emotions in a recipient. Therefore, situation modification adopts a problem-focused approach. For instance, if an employee is struggling with a heavy workload and feeling overwhelmed, a supervisor could intervene by adjusting the situation. This might involve extending the deadline thereby supporting the employee in completing the project successfully.

Cognitive change involves the process of selecting from various possible interpretations of a situation, then reappraising or reinterpreting it to diminish its potential negative impact on goals, concerns, and overall well-being (Williams, 2007). In this approach, agents engage in behaviors aimed at providing perspective to recipients, encouraging them to view the situation in a more favorable light. For instance, if an employee is disappointed about not being selected for a leadership role in a project, their manager might reframe the situation as an opportunity for personal growth and development. In a similar vein, one could view the current situation as a positive opportunity to acquire additional experience and skills that will enhance their readiness for future leadership roles, even if they are not selected at this time. Through this strategy, leaders seek to weaken emotion-provoking aspects of the situation in the recipient's mind.

Attentional deployment focuses on an agent’s actions are aimed at diverting the follower's attention to evoke more positive emotions (Williams, 2007). Attentional deployment differs from situation modification and cognitive change in that it does not involve removing, reframing, or directly addressing the underlying problem causing the undesirable emotion. Instead, when employing this approach, an individual seeks to divert the follower's attention away from the source of negative emotion.

Finally, modulating the emotional response entails exerting influence over tendencies in emotional reactions. This strategy aims to diminish the outward behavioral manifestation of an emotion once it has been experienced. When modulating the emotional response, agents adopt behaviors that prompt followers to suppress their undesirable negative emotions. For instance, a leader may instruct an employee to remain calm when upset or

advise them to "take a breath" (Little et al., 2016). Thus, akin to attentional deployment, modulating the emotional response is focused on managing emotions (Little et al., 2016).

b) Nivens et al.'s Model of IER (2007)

The framework presented by Niven et al. (2009) offers a comprehensive categorization of interpersonal emotion regulation (IER) strategies, dividing them into two main types: affect-improving and affect-worsening. Affect-improving strategies aim to elicit positive emotions or alleviate negative affect in the recipient, while affect-worsening strategies focus on the opposite outcome. These strategies can be further subdivided based on the methods used for regulation. For example, affect-improving strategies include positive engagement strategies and relationship-oriented strategies. Positive engagement strategies involve tactics such as active listening, supportive conversations, and providing a comforting presence, which aim to enhance the recipient's sense of competence and efficacy. In contrast, cognitive engagement strategies focus on altering the recipient's perspective on the situation to improve their emotional state. Relationship-focused IER strategies can take various forms depending on whether the objective is to enhance or deteriorate affect (Niven et al., 2009). For instance, acceptance strategies seek to improve the target's affect by demonstrating validation through behaviors such as providing attention, making the target feel valued, distracting them through humor, or being friendly to the target (Niven et al., 2009). This strategy places emphasis on an individual's social connections and worth, which helps alleviate negative emotions by making the recipient feel accepted and appreciated (Niven et al., 2009).

On the other hand, affect-worsening strategies aim to exacerbate negative affect in individuals. Negative engagement strategies encompass both negative affective engagement and negative behavioral engagement. Negative relationship-oriented strategies involve behaviors such as rudeness or ignoring the recipient, which serve to undermine the social connection (Niven et al., 2012; Madrid et al., 2019; Vasquez et al., 2020).

Table 2-1 IER Strategies

IER Strategy - Affect Improving	*IER Strategy - Affect Worsening*
Positive Engagement • Letting recipient emotionally vent • Giving the recipient recommendations	Negative Engagement • Challenging the recipient's behavior • Negative cognitive engagement
Relationship Oriented • Acceptance; Validation of emotions • Humor • Attention	Relationship Oriented • Non-acceptance of emotions • Rejection of emotions • Diminishing comparisons

Source: adapted from Niven et al. (2009)

2.3 Method

2.3.1 Case Study

A case study research method is a social science investigation that examines in-depth a contemporary phenomenon within its authentic real-life setting (Eisenhardt, 1989; Yin, 2009). It holds relevance when studying phenomena that are closely intertwined with their contexts, making it difficult to discern them separately. Case study design is useful for answering "how" and "why" questions (Yin, 2009). In a case study research, data can be collected with multiple methods to examine in-depth the study of a phenomenon (Yin, 2009). Accordingly, since one of the research questions pertains to how interpersonal emotion regulations may lead to decreased resistance in individuals, case study research was a suitable approach for this study.

I analyzed two distinct cases: one company in which employee resistance was said to be low, and another company in which employee resistance was high. This 'extreme' case study design (Yin, 2018) was deliberately chosen as each case presents starkly contrasting scenarios. By juxtaposing these cases, the aim was to identify both successful and unsuccessful interpersonal emotion regulation strategies. This also aligns with the critical realist underpinning, as a case study approach is useful to be able to compare and contrast, differing situations and their outcomes and expose the entities and structures that might influence those outcomes (Danermark, 2002).

Case study research can be used to either generate theory or test theoretical propositions; indeed Yin (2018) and Eisenhardt (1989) argue that case studies offer a means to assess pre-existing theories. In this study, I employed case study for both theory testing and new theory developing. Existing IER strategies were used as a conceptual lens through which to analyze how managers aim to stall employee resistance; yet, my inquiry aimed also to uncover new IER strategies applied for this purpose. With this approach, my aim was to enrich the conceptualization of both IER and resistance to digital transformation which fits the objectives of theory bridging (Janiszewski et al., 2016). Theory bridging refers to the process of recognizing relevant theories that explicate phenomenon in an alternative domain (Janiszewski et al., 2016). As stated by Tsang (2014) case studies are adequate for theory testing as well as theory bridging due to their in-depth investigation that leads to discovering generative mechanisms. Other scholars (Eisenhardt, 1991; Eisenhardt and Graebner, 2007) have also noted that case studies are suitable for underexamined issues. Indeed, because scholars such as Oreg and Michel (2023) or van Dam (2018) have recognized that interpersonal emotion regulation has been largely neglected in the organizational change literature, a combination of theory building and testing is warranted.

2.3.2 Selection of Cases

A consultation with experts in digital transformation led to identify two opposite cases of employee reactions to robotization: one company in which employee resistance was said to be low, and another company in which it was high. By contrasting these cases, the aim was to identify both successful and unsuccessful interpersonal emotion regulation strategies.

Gaining access to the managers was accomplished similarly in both cases. I gained contact to the responsible manager of company A in February 2023. I met the CEO of the company and explained the purpose and scope of my research. In March 2023, I met with company B which is also a manufacturing company in the furniture industry. I firstly met the CEO of the company and explained to him my research intention and scope. Both companies introduced robotization to the manufacturing process years before the research took place for the following reasons: maintaining competitiveness due to its external threats (aggressive competitors), decreasing the physical burden for employees at the factory, decreasing costs

and increasing time efficiency. In particular, by introducing robotization it improved the health and safety for employees which in turn also engendered a decrease of costs that allowed the company to remain competitive in the sector.

2.3.3 Unit of Analysis

The foundation for many decisions in designing and conducting research is the unit of analysis, and thus it needs to be discussed before the data analysis process (Patton, 2002). Both companies provided us with a sample of managers reflecting a broad range of departments. Following purposive sampling, we included different managerial positions (front and back office, factory vs. support services; IT and non-IT managers) in both case studies. Purposive sampling encompasses selecting participants who are most likely to provide relevant and valuable information (Kelly, 2010). A description of the participants is provided in Tables Table 2-2 Participants Company A and Table 2-3 Participants Company B.

Table 2-2 Participants Company A

Participant	Years at the company	Level of Manager	Department
A1	16 years	Chief Executive Officer	Entire Company
A2	18 years	HR Director	Human Resource Department
A3	29 years	Middle Manager	Maintenance
A4	15 years	Supply Chain Director	Supply Chain
A5	5 years	Middle Manager	Digitization/Technical Deployment
A6	25 years	Senior Industrial Manager	Project Industry/Quality System

A7	8 years	Production Director/Plant Director	Manufacturing Plant
A8	11 years	Middle Manager	Innovation Cell

Table 2-3 Participants Company B

Participant	Years at the company	Level of Manager	Department
B1	13 years	Director of Production	Factory/Production Plant
B2	17 years	Project Manager	Project Management
B3	29 years	Middle Manager	Dispatching Department
B4	16 years	Lower Level Manager	Production
B5	19 years	Lower Level Manager	Production
B6	9 months	Industrial Manager	Fabrication/Quality
B7	20 years	Middle Manager	Information System/Digitization
B8	19 years	Planning Manager	Factory/ Production Plant

2.3.4 Date Collection

A case study approach allows for employing multiple sources of evidence in order to make a compelling, rich and realistic portrayal of the case (Yin, 2009). Such multiple sources also help in data triangulation (Yin, 2009). Specifically, I used semi-structured interviews, observations and archival data, as explained subsequently.

a) Interviews

The main data source was semi-structured interviews. Semi-structured interviews offer various advantages, such as the possibility that informants explain phenomena in their own words, thus providing valuable insights (Given, 2008). Interviews also foster rapport and relations with the participants, thereby also facilitating the collection of comprehensive information such as opinions, knowledge or nonverbal behavior (Given, 2008). In this case, in-depth interviews were conducted in a conversational way in order to make the participants feel more relaxed. The interview process started with a series of questions concerning the manager's background and profile details (such as department or years at the company), following King's (2004) recommendation to ease participants into the discussion.

Before data collection, ethical approval for the study had been granted by the university's research ethics committee. I also created an interview guide prior to conducting the interviews. This helped me as a guide and checklist for the themes I wanted to inquiry about, also guaranteeing that all relevant topics were addressed (Patton, 2002). The interview protocol included 14 open-ended questions, mainly covering three categories: (a) the role of the managers (b) the experience with robotization and resistance and (c) the strategies that have been implemented to reduce resistance. The interview guide used is attached in the appendix a. The interviews were conducted during March and April 2023 at the premises of the company in a private room or virtually. The interviews ranged from 20 min to 1 hour in length. All participants were briefed on the research objectives (studying employee responses to organizational change) and informed that their contributions would be recorded solely for the study's purposes. If consent was provided, interviews were recorded and transcribed verbatim.

b) Observations

Observations were also part of the data collection. I was also able to take photos during my field work at both cases. I spent two full days in both companies when I was able to directly observe workers in their 'natural' organizational settings, while they were working but also while they were taking a short break. I was able to see how they acted with the robots, how

they worked with them. I was also able to see all stages of the robotization plant (e.g. from assembling to wrapping it up for shipping). I was also introduced to various departmental offices. Here I made a distinct observation. In case company A, the factory plant was in the same building as the offices of management. However, in case company B, Management was in another building which was around 5km away from the factory plant, so I had to travel there to be able to visit it.

During my time, I exercised caution when collecting data using methods that seemed fitting and suitable for the circumstances I faced. To illustrate, I would alternate between taking notes or pictures on my phone and making notes on my laptop. I always intended to be the unobtrusive observer (Marshall and Rossman, 2006) during my fieldwork time. Further, I made a point of detailing in my field notes the aspects of body language during meetings (Marshall and Rossman, 2006) since these types of insights could not be obtained from a recording. I have also taken pictures, which I deemed necessarily and important. Particularly, pictures were taken at the factory plant in order to better understand how robotics worked and what other technology the companies implemented.

c) Archival Data

Further information was also extracted from external documents about the two companies for triangulation. External documents encompassed press releases, newspapers, YouTube videos as well as documents that the company published on their website.

2.3.5 Data Analysis

The analysis of data started after the first interviews were conducted. The stages encompassed familiarization, sorting data, initial coding and coding into main themes.

a) First Stage: Familiarization with Data

The first stage encompassed the familiarization process which occurred during transcription of the interviews. Transcription serves as an essential phase in qualitative data analysis methodology (Braun and Clarke, 2006). Hence during this stage, I already became

acquainted with the data, iteratively reading in order to understand its core concepts (Ritchie and Spencer, 1994) and to discern meanings and patterns (Braun and Clarke, 2006). Further, I also took advantage of taking notes and annotations that helped me capture reflections and insights that emerged. The process of familiarization entailed immersing myself in the dataset, commencing with the editing of interview transcripts and referring to notes taken during the interviews and memos written afterward. Transcripts underwent scrutiny, being checked and rechecked to ensure precision.

b) Second Stage: First-order themes

The initial analysis and categorization of the interviews started right after the first interviews. Here, at this second stage open coding was used which "is designed to break open the data to consider all possible meanings" (Corbin and Strauss, 2008, p. 59). Data was linked with first-order codes that addressed the main topic of interest in the thesis. Throughout this phase, I alternated between analyzing data and consulting literature to interpret the emerging concepts, which also assisted in refining my coding framework. Using an open coding process, in-vivo codes or verbatim statement were used to categorize data that seemed related to interpersonal emotion regulation within the robotization context. This resulted in the first order themes.

Next, I used common themes to link together data from different interviews but related categories. For example, in the following statements:

There was a lot of fear of the workforce.

It generates fear and uncertainty.

We also try to do things, so that people don't feel threatened by that kind of technology.

I coded primary codes such as fear, fear of the workforce, technological threat and uncertainty. This helped me firstly to unearth the emotions that management targeted and were felt by employees, but it also aided me in clustering my initial first-order codes. I

alternated between inductive and deductive coding. Deductive coding was employed to identify strategies that aligned with the existing literature, as evidenced in the following cases. In contrast, inductive coding shifted the focus to the specific managerial responses to these emotions, allowing for the identification of strategies that had not been previously addressed in the literature. This process of inductive coding was systematically applied to all interviews to uncover potential novel findings

We also try to do things, so that people don't feel threatened by that kind of technology

Showing that we know what they are going through

You have to be there with them to understand

I grouped the various strategies based on their common goal. For example, in the statements above the common goal of management was to show presence and empathy. Accordingly, in this context, the primary codes derived from inductive coding encompassed presence, empathy, and understanding of management regarding the employees' perception of robotization. Theoretical saturation (Corbin and Strauss, 2008), was attained when further cycles of open coding did not yield any new codes. Consequently, I proceeded to the next stage of analysis.

c) Third Stage: Second-order themes

During this stage, axial coding took place, meaning assembling first-order categories into more abstract, theoretical categories (Corbin and Strauss, 2008). Axial coding involves relating concepts that emerge from open coding through comparing and contrasting. The objective of axial coding is to provide additional depth and organization to existing categories (Corbin and Strauss, 2008). Here, I drew interpretations from specific examples within the data, continually revisiting the literature to anchor my emerging insights in existing emotion regulation theories. This process was characterized by constant comparison, as I analyzed and developed codes to describe the data, while also comparing data that did not quite fit with the theoretical framework (Glaser and Strauss, 1967). Yet I also remained open to new themes

that I discovered during the analysis following the framework of grounded theory (Glaser and Strauss, 1967). This allowed me to identify various second-order themes. Further, this approach also allowed me to identify several second-order themes, providing a deeper interpretation of how emotion regulation strategies manifest in the context of my study. These core categories formed the backbone of my analysis, representing key interpretations drawn from the data.

Well, I think we all have that defense mechanism to everything new. That we are all going to be laid off because now there will only be robots working.

At the beginning, the negative reactions were mostly of hey, this is going to take me longer, thus resistance occurs.

All this generates a lot of fear and uncertainty and you have to let some time pass for people to really see that the robot is also there to

For instance, the above statements were categorized in the second order code, as the awareness of negative emotions. Here managers were aware of the negative emotions that the robotization instigated. For every interview from company A, I compared data across participants from company B in order to understand how these concepts relate. Here I also engaged in pattern matching to see the differences between the two opposite cases, as shown in the following examples:

Being with them because you know that there are several personalities of employees that need to be supported, not to make them seem that is something that will slow them down in their work – Company A

You give everything to the workers, you demonstrate them everything. Then when you leave, they go back to the old system- Company B

In this case, one company engages in participation, point of view taking, and accompaniment while the other company uses a more detached critical approach. This

pattern matching helped me to group the core categories which will be discussed now in the fourth stage.

iv) Fourth Stage: Emerging Framework through core categories

This phase of the coding involved sorting the emerging data and concepts into a comprehensible structure. I was guided by major themes and looked selectively for cases that displayed these themes, while at the same time making comparisons and contrasts. From the second-order codes three core categories emerged: perspective taking – indifference, psychological safety – psychological danger, and resistance. The focus was on unifying the data into core categories. As I interpreted the data, I noticed that, although no company explicitly mentioned psychological safety, patterns within the responses suggested it was a significant underlying factor. Based on these patterns, I identified psychological safety as an emerging core category, which provided a crucial process for understanding how emotion regulation strategies were influencing employee behavior in the context of the study.

I then used these core categories to align them to the three pathways (see Figure 2-2 Data Coding Structure for Company A and Figure 2-3 Data Coding Structure for Company B) that were elaborated in chapter 1. This served me to understand how the specific threats were approached by company A and company B. Whenever data did not align with the theoretical framework's concepts, I kept it for a potential future contribution to the theoretical framework in this case to the body of interpersonal emotion regulation.

Figure 2-2 Data Coding Structure for Company A

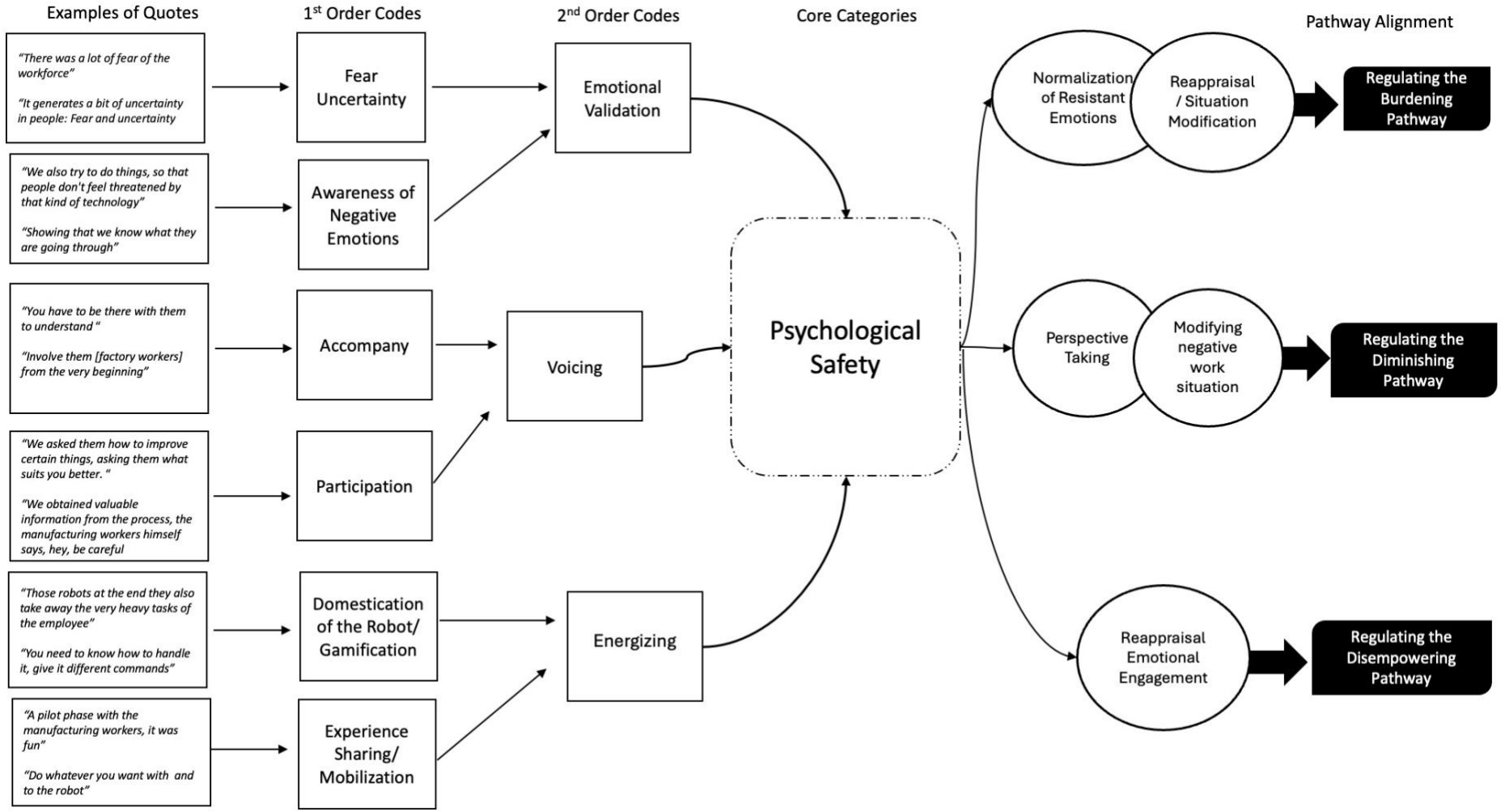
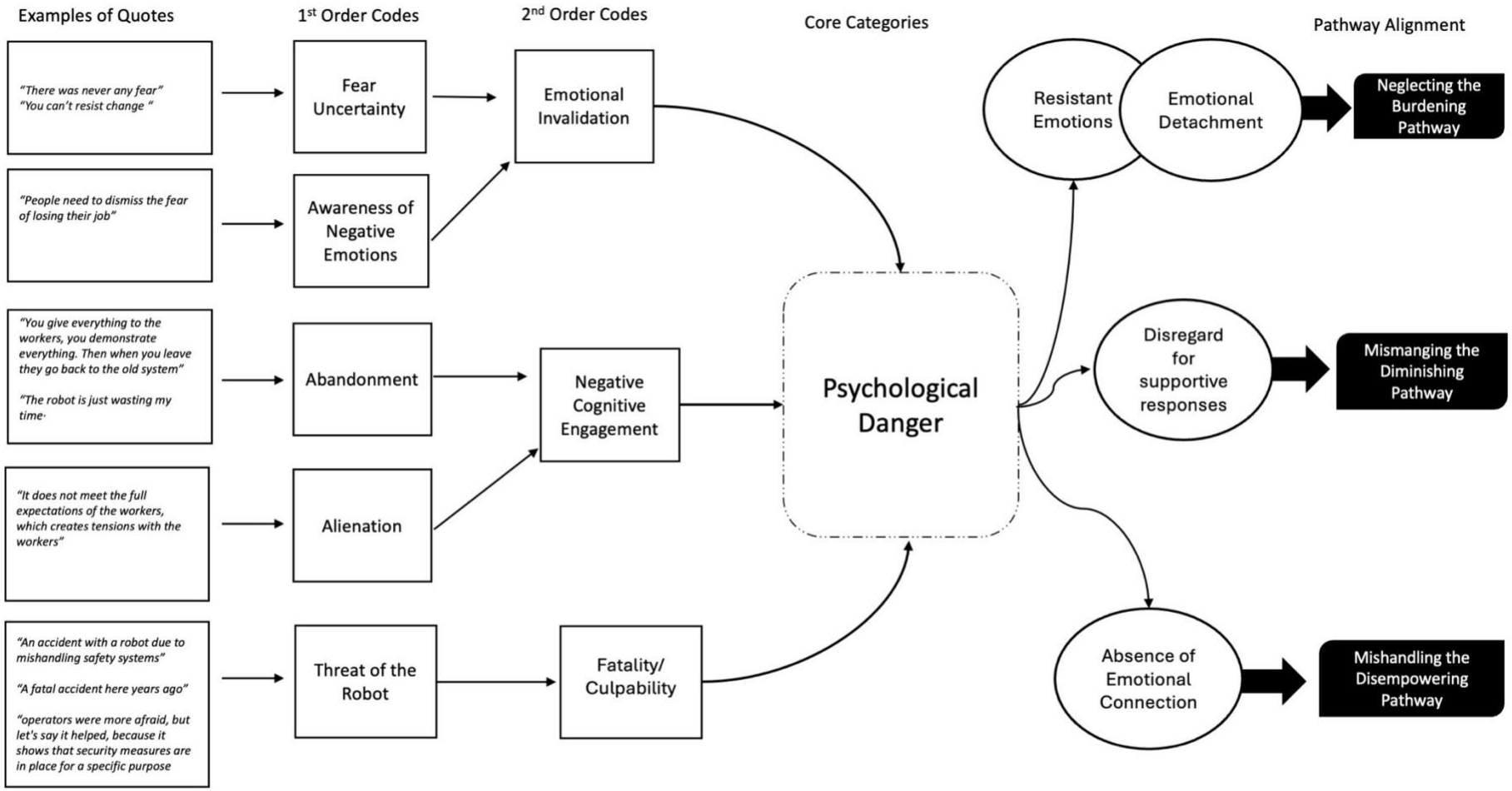


Figure 2-3 Data Coding Structure for Company B



2.4 Findings

2.4.1 Case Description

a) Company A (Automotive Industry)

Company A is a distinguished automotive manufacturing corporation with a substantial global workforce of more than 5000 employees and a presence in over 14 countries. Its extensive network of 20 production facilities produces components for prestigious automotive brands, such as BMW and Mercedes. In fact, it is one of the leading production and engineering firms. As part of the company's mission, the organization takes into consideration the responsibility it has towards its owners, business partners, employees, and the environment on a global scale, in each business area. The company is acclaimed for its unwavering commitment to innovation, quality, and sustainability. The manufacturing processes of this company were particularly burdensome for employees as they were physically demanding in a context of high noises and high temperatures. Also, the processes entailed some risks for employees so that they were forced to follow strict safety procedures. As a note, all manufacturing workers work separately in assembly lines together with the robot.

The organization's core values and principles strongly emphasize a commitment to continuous improvement. This commitment is also deeply ingrained in promoting creativity and collaboration throughout all departments. This foundational principle of continuous improvement highlights the dedication to ongoing growth and development for the company, and encourages a culture of learning, knowledge acquisition, and skill development. To implement this culture of innovation and ongoing improvement, the organization created the 'Innovation Cell', which allows all employees to contribute innovative ideas that may result in cost savings or increased efficiency. This initiative was groundbreaking and has since been copied in other locations within the company. This "Innovation Cell" brought positive changes to the company and fostered an environment for creativity and cross-collaboration helping to generate new ideas and exploring innovative solutions. Consequently, according to the participants, the senior manager that promoted the creation of the innovation cell played a crucial role in initiating the cultural transformation within the company.

b) Company B (Manufacturing Industry)

Company B is a Spanish multinational furniture manufacturing company that has been in operation since the 1970s and currently employs over 1000 workers. It has 4 industrial plants in Spain and two in the United States. It is a leading international company headquartered in Spain, providing premium panels and furniture components for the furniture and interior design sectors. The company's product line comprises a wide array of items such as furniture panels, furniture components, and finished furniture. It primarily sells its products through three main channels: directly to kitchen furniture manufacturers, to department stores, and through its own distribution network, which targets installers primarily.

Its industry advancements and cutting-edge products have enhanced the quality, competitiveness, and versatility of the industry, as well as architecture and interior design projects. The organization's core values and principles include commitment to customers and suppliers in order to guarantee the highest quality of their products. Further, the company also focuses on sustainability paying special attention to environmental protection when producing their final products, having also approved an environmental management directive. This commitment to both the industry and the environment is a vital aspect of their dedication to sustainability. Further, the company's goal is to innovate by reinvesting profits in research and development and innovation. Management mentioned that the company's traditional values are innovation, sacrifice, and quality. Being a family company since the 1970s, in 2019 the company was acquired by multinational investors. Like in company A, all manufacturing workers work separately in assembly lines with the robot. Moreover, at the early stages of its introduction, the company faced a tragic work-related incident where one of its employees lost their life. The worker's head and thorax were trapped inside a robot of the company (Redacción, 2016).

2.4.2 IER for Stalling Resistance

i) Regulating the Burdening Pathway

The burdening pathway of resistance occurs when employees perceive robotization as a threat to their employability. Here robotization is appraised as a replacement of employees. Such replacement poses a threat to their source of income by jeopardizing their present and future employability. As a result, they experience fear and anxiety which usually lead to various behavioral outcomes such as passive resistance.

Company A

Company A has firstly approached this pathway by normalizing resistant emotions through acts of perspective taking. The majority of managers acknowledged that there was fear and uncertainty in employees due to the introduction of robotization.

So there, of course, began the fear of thinking, Hey, tomorrow they'll fill this place with robots and we forklift operators will all go home, right? Well, at the beginning of course, of resistance from that sector, because it says: Hey, this is doing my job – (A4)

Robots at the beginning... Well, I think we all have that defense mechanism to everything new. That we are all going to be laid off because now there will only be robots working, so it generates a bit of uncertainty in people: Fear and uncertainty – (A2)

First there was a lot of fear of the workforce – (A5)

The statements above illustrate how managers are cognizant of the emotions experienced by employees when robotization was implemented (fear and anxiety) and that these emotions may direct resistant behavior of employees. Further, management's early focus was on understanding these emotions as it is further highlighted by the fact that management did not dismiss the fear of feeling threatened but validated it:

We also try to do things, so that people don't feel threatened by that kind of technology – (A6)

Initially, management recognized the emergence of fear and uncertainty among employees. Rather than ignoring these concerns, they acknowledged and normalized these feelings. This approach not only addressed employees' immediate experiences but also laid the groundwork for effective emotion regulation strategies. By validating these emotions, management created a psychologically safe environment where employees felt secure enough to openly express their concerns. This environment was crucial for preparing employees for subsequent changes and interventions.

Building on this foundation of understanding, management then proceeded to engage in reappraisal strategy to help employees reconsider their perceptions of the new technology as shown by the following statement:

Showing that you know what they are going through, that this is not coming to eliminate you all, because we need you, because this robot can't do many tasks that you keep doing everything – (A4)

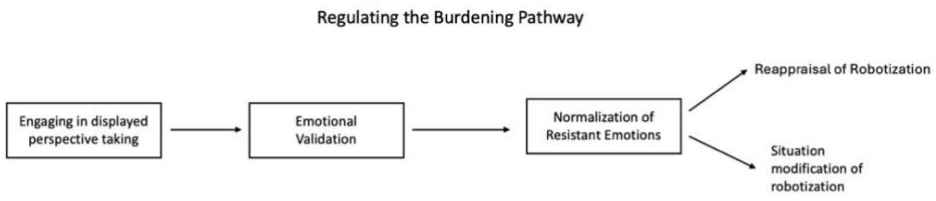
This reappraisal strategy effectively helped employees manage their emotions by reframing their initial reactions—such as fear of being replaced or anxiety—into more positive or neutral perspectives. This transformation is crucial in reducing the negative impact of such emotions on employee morale. Further evidence is seen in the application of the situation modification approach. By elevating the perceived value of employees' roles within the organization, management not only enhanced the professional worth of the workforce but also actively mitigated fears and anxieties. In this case, management intended to give employees a “higher value” to their profession. This approach, therefore, not only addressed the emotional dimensions of resistance but also fostered a more resilient and engaged workplace.

That person is not being fired, we move them, we try to give them added value – (A6)

There are manufacturing workers who have been working for 5 and 6 years. They were doing repetitive work with no added value and today they are able to program mobile robots, collaborative robots… all these people have achieved a requalification – (A1)

This 'added value' as it is called by management in company A can be seen as a form of IER Strategy, in particular *situation modification*. In this instance, management modified this seemingly negative event (potential job loss) by offering them a more esteemed position. Therefore, fear or anxiety of being replaced may have been appeased. The possibility of requalification or even career progression thus helps to regulate negative emotions such as fear of replacement, as it may decrease employees' fear of substitution by fostering a sense of security and relevance. By investing into the worker's growth, management also demonstrated commitment to their employees. In sum, it can be said that to stall this form resistance there is a triad of strategies. The first one is the perceived perspective taking which causes the validation and normalization of emotions. Employees may hesitate to express their concerns and fears about the robotization process, fearing backlash or repercussions from management. However, when managers acknowledge and normalize these feelings, it may enhance safety for the employees in the workplace. Then, management intends to reappraise the negative situation and modifies it for the benefit of the worker. In the background, these acts instill a sense of psychological safety and security in employees, decreasing the likelihood of feelings of substitution.

Figure 2-4 Burdening Pathway



Company B

In contrast, managers at company B did not engage in perspective taking nor did they validate the emotions of its employees when it comes to the fear of replacement by robotization. The remarks not only signaled a denial of the existing negative emotions among employees but also demonstrated a non-acceptance or trivialization of the employees' fears. This indifference was evident in the management's general lack of emotional awareness as displayed through the following statements.

A little bit of doing it on our own and trying to cut costs more smoothly – (B7)

In the end, a robot will perform the same work as a person, and it is important for a person to clearly define their job so that the robot can replicate it – (B1)

Well, there was never any fear, I mean, fear of substitution.... The atmosphere was just fearful with doubts, just afraid whether they going to use the robot right – (B8)

This signals a denial of the negative emotions in employees. In this context, management is nonaccepting or downplaying the existence of fear during the robotization change. Further, managers were unaware of how employees felt about the change.

If you ask me what they think? Well, I don't know, because I just don't know – (B1)

I did not talk with any employee about the robotization – (B8)

This statement also suggests a lack of connection and engagement with the employees. Moreover, it indicates not only a gap in communication but may suggest even emotional detachment. When employees' sentiments about the transformation were dismissed or overlooked, it indicates how management did not validate the emotions of employees. Another manager also mentioned that a worker should not resist any potential change.

People need to dismiss the fear of losing their job. If the company does not change, we all lose because you cannot fight against change, change is coming, will come and is coming. You can't resist change. If we do we will be out of the market... If we are out of the market, everyone will lose their work – (B7)

Such statements by management that employees should not resist changes further encapsulated this detachment, showing a disregard for the potential negative emotional impacts that these changes could have. This is akin to the strategy of dismissal and rejection of potential negative emotions (Niven et al., 2009) that may cause resistant behavior. This statement also shows the managers' inability to understand the employee perspective and their detached stance towards the emotions of manufacturing workers. It may even suggest a disregard for the well-being of employees who might be worried about their future job security. Further, this reflects a managerial approach characterized by emotional detachment from employees, evidenced by the dismissal of employee sentiments and the disregard for potential negative emotional consequences.

ii) Regulating the Diminishing Pathway

The diminishing pathway is characterized by the threat to work performance, as the novel technology creates more obstacles and problems for employees. Here robotization functions as an obstacle/barrier as it poses more problems for carrying out their work tasks than benefits. As a result, it causes emotions such as frustration, distress or technostress.

Company A

Firstly, company A acknowledged that the introduction of robots may create certain obstacles in the initial stages of introduction, as evidenced by the following statement.

At the beginning, the negative reactions were mostly of 'hey, this is going to take me longer' thus resistance occurs… during this period of learning, it is true that it generates double tasks, two systems, looking at two places – (A4)

Being with them because you know that there are several profiles of employees that need to be supported, not to make them seem that is something that will slow them down in their work – (A6)

Management began by mentalizing and actively engaging in understanding how employees felt about the new technology. Here mentalizing refers to gaining awareness and being mindful of the employee and how robotization affects him or her. This process was not only about acknowledgment but also involved accompanying employees through the transition, providing continuous, visible support directly on the factory floor. Such actions demonstrate management's commitment to easing the change process.

We see it from a managerial point of view so we have to go down to factory to see it. To say, hey, this sounds very good in theory, but let's see in the plant whether we are really helping them, not that from above it looks good but then once you go down to the factory you see the little details which are actually impeding the…, so you have to be there with them to understand – (A4)

Management instituted a structured feedback loop, encouraging employees to participate actively in refining the robotization process. This participation allowed employees to voice their concerns and suggestions openly. Such voicing mechanisms were structured through regular forums and direct channels to management, ensuring that employee feedback was integral to decision-making processes which helped to report potential obstacles to the work performance. Accordingly, management implemented a problem-focused engagement strategy (Niven et al., 2009) enabling employee voicing as the below statements further highlight.

We always try to bring the worker with us. Hey, help us to make (the robot) better – (A6)

Involve them [factory workers] from the very beginning and make them aware that this is a tool to make their work better – (A4)

It was done in phases, with ongoing teaching, and learning and involving them [factory workers] in all processes. In the end, all these things have helped them to see themselves as participants. We asked them how to improve certain things, asking them what suits you better. They gave a lot of opinions what would be ideal and they have been involved from the first launch. Everyone was playing a crucial role, everyone was able to contribute and they have not been alone, they have always had a person to listen to – (A4)

The statements above highlight that management's priority was to ensure that employees are included in decision-making processes and are given a voice throughout periods of change. Voicing entails asking the employee for feedback and opinion regarding the implementation process. It is directed at the employee herself, allowing the employee to communicate potential ideas and actively participate in the decision-making process. Giving voice to the employees helps management spot irregularities with the technology. Listening to employees makes management understand where robotization is failing and thus they can properly address these deficiencies. By addressing the concerns raised by employees, management was able to modify the negative work situation. This was evidenced by adjustments in work practices and enhancements in the interface and functionality of the robotic systems, directly addressing the operational issues identified by employees. Such changes not only resolved specific problems but also demonstrated management's commitment to taking employees' perspectives seriously. This approach of perspective taking by management enabled employees to reappraise their views on the robotization process. Accordingly, frustration or distress may be decreases as the problems with the technology itself are being addressed by management. This helps employees to reappraise the robot, since now the technology works better due to the employees' input.

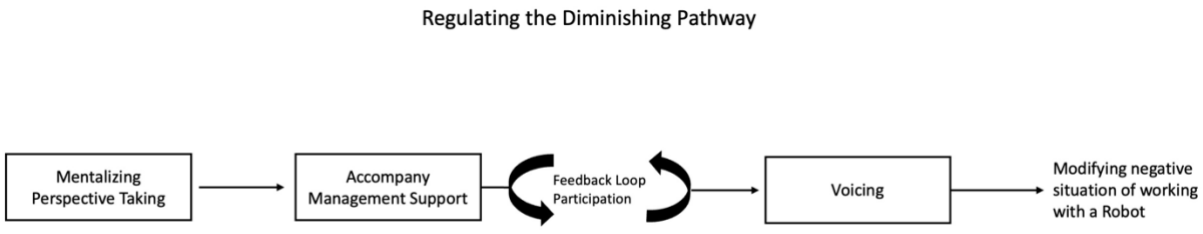
Many times with that we have obtained a lot of very valuable information from the process itself, that is to say, to say things that we have not seen and that the manufacturing workers itself says, hey, be careful– (A6)

This highlights again that management devoted time to engage with employees and incorporate their opinions in decision-making, potentially making them feel valued. This

approach may lead to two things. Firstly, it fosters a supportive work environment. Research has also acknowledged that voicing by employees is seen as challenging (Detert and Burris, 2007; Morrison, 2014), since individuals may take the risk of damaging their identity and public image at the workplace (Lee et al., 2023). Yet in this case, management encouraged voicing. Indeed, through voicing employees pointed out work-related problems in this case with the robots. Accordingly, the technology itself was being improved with the input of the employees. Secondly, it may regulate employees' emotions by displaying ‘value’ to them and taking into account their opinions. In sum, it can be said that perspective taking was enabled by visits to the factory which occurred during the start of implementation.

During the use of robotization, the company also engaged "voicing," which involved establishing forums where workers can express any concerns or challenges, they may have with the use of robots. This in turn, signalled the value that management has for its employees helping them modify the negative situation (Figure 2-5). What also needs to be mentioned here is the possibility of co-regulation within this pathway. By sharing opinions and giving feedback to the managers, this could have reduced managers’ frustration with either resistant behavior or the technology itself because they knew the details from employees. As a result, managers could address the issues more effectively by collaborating with the workers. Consequently, this could have acted as a form of co-regulation whereby the employees helped the emotional states of management.

Figure 2-5 Diminishing Pathway



Company B

Company B acknowledged that the technology posed various obstacles to for employees regarding their work performance.

To some extent a little bit yes [a threat to performance], the issue of sometimes doing the projects a little bit on our own and trying to cut costs in a more fluid way, sometimes you forget things, you think, this will work fine, it will work, but will it be the most efficient? It will cause more problems to operate it – (B7)

This is further highlighted by the following statement:

The machine, it had bugs and a lot of problems – (B1)

Because we often make mistakes there. It is not good to implement robotization processes that are not proven, that are automatic, that are complicated and that need a lot of software and tuning. In the end, you end up paying if you implement it without having tested it, apart from the problems you may have, you still have a problem with a machine that does not work – (B6)

Another manager also noted that employees returned to their old habits and systems when the robotization took place due to the deficiencies of the robot.

You give everything to the workers, you demonstrate them everything. Then when you leave, they go back to the old system – (B7)

This shows that employees reverted to their previous systems and habits, signaling a lack of adoption of the new technology. This return to familiar workflows exemplifies a clear case of abandonment as employees discarded the robotization in favor of old, trusted methods due to the new system's deficiencies.

“I'm doing fine now, what's this for? That’s [the robot] just wasting my time” – (B3)

This is further evidenced by the following statement in which the robots did not live up to the expectations of the employee. Accordingly, it might have created a sense of alienation and abandonment in the employees, because it did not live up to the expectations of the employee.

It does not meet the full expectations of the workers, which creates tensions with the workers – (B7)

We actually had an accident in the factory, years ago with a robot. One person even lost his life. Such projects, improvising second-hand material, believing that it is enough, not considering all the parts, and this type of final error is also perceived by the workers when you make an installation and you say that it has to be done in two months and it takes 6 months, and then with the accident, or create mistrust don't you? Especially, in the manufacturing workers and yes, this was a shock. It impacted the plant and for a while there was distrust in the installations and fear – (B7)

Yet, what stands out here is that many employees left the company due to the frustration of working with the robot. This misalignment between expected and actual performance of the technology led to frustration among the workforce. The technology's failure to live up to its promised efficiency alienated employees, fostering a disconnect that management failed to bridge. Such outcomes directly reflect a negative cognitive engagement where the employees' mental and emotional responses to the technology were predominantly negative, influencing their overall engagement and productivity negatively.

What I can tell you is that many people have left formations frustrated, leaving the company because they have not been able to work with the machine (…) But the machine, not being at one hundred percent, had many failures and many problems. So people who have not been able to overcome this, who were frustrated thinking the problem is me, so people have not continued the training and have left the company. Saying: "I don't see myself capable of running the machine" – (B1)

This indicates a failure in managing the emotional impact of technological changes on employees. Thus, management's inadequate response to the emerging issues by not providing adequate support to address them further may have fueled the employees' dissatisfaction. This lack of supportive responses from management not only neglected the emotional and practical needs of the employees but also led to an increase in turnover, as evidenced by many employees leaving the company due to the unresolved frustrations.

Furthermore, the situation suggests that emotional dysregulation among employees may have occurred due to inadequate efforts by management to mitigate and manage these emotions effectively. The absence of proactive emotional regulation strategies not only intensified employees' feelings of instability and insecurity but also highlighted a broader sense of psychological danger within the workplace environment. As opposed to company A that increased psychological safety in its employees, employees in company B perceived that taking risks in the workplace such as by voicing their opinions about the training could result in repercussions, thus facing psychological danger (Lanke, 2023).

It was also further noted that this frustration created an emotional contagion among workers:

Yes, it is true that people get frustrated, yes, yes, yes. It spread to the other person – (B1)

Accordingly, this may have exacerbated negative emotions in employees leading to the emotional climate of distress and frustration which may have led to emotional dysregulation in individuals, causing them to leave voluntarily the company. Management acknowledged that it was a distressing moment for the employees.

Very painful for them (to leave the company) and I think people have felt very bad, of course – (B4)

The company did not engage in supportive responses as they just let the employees go. Further, when employees voiced their frustration about the deficiencies of the machine,

management just acknowledged that this is normal and part of every factory. It can be said that such responses from management exacerbate the feeling of disconnect between employees and the company by failing to nurture an environment conducive to adaptation and improvement.

In addition to the production problems you already have, you also have a problem with a machine that does not work properly, and this happens in all new processes. With the machine, there are many problems which is normal, they always occur with them but in the end it will work in one year? Yeah it will work – (B1)

This shows again that management dismissed and rejected the frustrating emotions of employees. It acknowledged and understood why employees feel frustrated, but avoided doing any action that could appease this emotion. Rather, they asked them to cope with it in their own terms until the machine was fixed and worked properly. They do not even take responsibility for the reduced productivity due to the bugs and working problems of the robots. The company did not intend to regulate the negative emotions but rather let employees voluntarily leave the company.

iii) Regulating the Disempowering Pathway

The disempowering pathway is characterized by the threat to autonomy, power and the worker's identity. This path is linked to the disciplining function of robotization, and it can elicit emotions such as anger or fear.

Company A

Company A approached this disempowering pathway firstly by understanding the heavy tasks that manufacturing workers perform on a daily basis. Although, robotization was introduced due to efficiency aspects, it also helped in alleviating the physical burden of employees.

So, those robots in the background, they also take away the very heavy tasks, such as very heavy lifting of the shoulders. So, in the end, it seems to help them too – (A7)

Accordingly, it can be said that management firstly engaged in empathic concern (Zaki, 2020) by acknowledging the arduous tasks and then proceeded to introduce the robot through positive affective engagement (Niven et al., 2009). Through gamification, management transformed the initial perception of robots from potential job threats to beneficial tools aimed at alleviating workload. During the pilot phase, employees interacted with robots in a controlled, playful environment, which allowed them to "play" with the technology—throwing a notebook in front of the robot to observe its response, for instance. This playful interaction was not only engaging but crucial in modifying employees' emotional responses to technology, turning apprehension into curiosity and acceptance. This may have helped to elicit positive emotions, as the statement below shows.

So, it was really fun with to do with the robot whatever you really want to do, that is, for example walk around and all of a sudden, to cross. So we had a pilot phase, well, a month with tests with the supplier, here, doing 1000 dirty tricks to the robot, putting the robot in 1000 places, with the manufacturing workers, I mean, things like we got in front of him and threw a notebook on the floor to see what he does, that was what it was, really do whatever you wanted to do. It was fun and it was helped in gaining general awareness, I mean, well, this is safe. At the end of the day it is living and interacting with us – (A4)

This demonstrates that management encourages exploration and experimentation with robots. Further it also showed that the 'fun' part energized employees to further explore the robot. By actively involving employees in this type of 'gamification', management effectively mobilized the workforce to adopt the new technology. This mobilization was crucial, as it did more than just introduce employees to the robot; it engaged them in a process that reshaped their interactions and integration with the technology. Even though this gamification might initially not seem like an interpersonal emotion regulation strategy, it indeed fostered a shared experience and elicited positive emotions, thereby strengthening the cohesion of employees and bolstering relationships within the workplace. Further, here employees could break free from traditional work behaviors and thus readjust to the new

robotized routines. Yet, the more important element of this strategy is its focus on empowering employees, showing that they were in command and that the robot was a servant, say, in their work routines. Here management restores independence and autonomy to the employee.

This robot doesn't work alone, it coexists with you all, you need to know how to handle it, give it different command – (A4).

They are going to live with a robot, then they have to be part of the coexistence of a project – (A7)

This emphasizes that the gamification of the robot energizes the employee by regaining power, seeing himself in the role of master of the robot, not in the role of a slave to the robot. This was further reinforced by the tasks that management chose to replace with robots: they prioritized those that could alleviate the burden of the physical work of manual workers. Furthermore, it can also be assumed that the workers were now more 'energized' as a result of the robots having taken on the most laborious tasks.

The disempowering pathway is also characterized by the loss of power and autonomy through surveillance which are introduced by the robotization. Yet company A diminished this emotional experience by mobilizing the employees through financial rewards, as the following statements show.

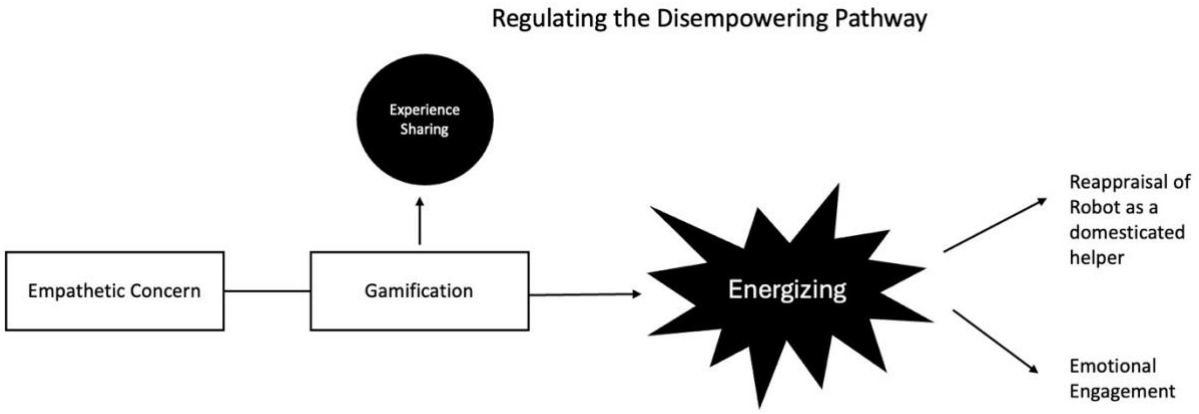
What has been done regarding this (Surveillance) and that has been well received, is that in real time we are giving the employees their productivity, so the factory worker can adjust his work pace for an economic incentive – (A4)

So, the factory worker sees the output produced on the screen and that also helps him to improve, because he is also seeing the amount of defects that is being generated – (A3)

Accordingly, this 'energizes' the employee to improve his productivity. Likewise, this also helps the employee to regain control and power again over their work situation. By tying

a monetary reward through the use of robotics, employees can choose how much they want to produce. In turn, these rewards in the long run can also increase the status of employee overall at the workplace due to their contribution to productivity. Here, similar to the gamification practice they are being empowered by management. Indeed, extant research has demonstrated that rewards have a crucial impact on empowerment (Forrester, 2000). Employees desire to be recognized in the form of rewards, and thus rewards for their productivity is a form of power for individuals (Forrester, 2000). Therefore, this cycle of empowerment, productivity, and recognition serves as a model for emotional engagement, where employees not only understand the benefits of the new technology but are also motivated to continuously engage with and improve upon it. In sum, both gamification and mobilization empower employees thereby strengthening their psychological safety. In turn, this 'energizing' is a form of emotional engagement which helps to also reappraise the robot transformation (see Figure 2-6 Disempowering Pathway).

Figure 2-6 Disempowering Pathway



Company B

While company A acknowledged that robotization may instigate anger in employees due to the feeling of powerlessness, company B did not validate the feelings of employees. This is evidenced that management simply did not accept any emotions stemming from the robotization change. The mortal accident that occurred at the organization provides a good instance of how the management team ignored employee emotions, even when this accident was a clear display of disempowerment as the worker can even be killed by the robot. In fact, this oversight was starkly illustrated when a fatal accident occurred, not only demonstrating

the physical "danger" of the robot but also significantly heightening the sense of "psychological danger" among the workforce.

We had an accident years ago with a robot, including the loss of one person's life – (B7)

We have had one, which was a fatal accident here years ago, and after this accident occurred, all the installations were revised, they (the operators) were also aware of the danger that these machines have – (B1)

There has been an accident with a robot due to mishandling of safety systems. And the operators were more afraid, but let's say it helped, because it makes people see that security measures are in place for a specific purpose and cannot be bypassed – (B8)

What is important to acknowledge in this statement, is that it seems like management is putting the blame on the employees regarding the accident. This statement above also emphasizes that the accident occurred to help employees become more responsible with the robots. At the same time, this approach also diminishes the perceived responsibility of management in the accident, potentially deepening employees' sense of both psychological and physical danger. The psychological danger is exacerbated as employees feel that blame is unfairly placed on them, while the physical danger is starkly underscored by the loss of a coworker's life. Furthermore, by downplaying the severity of the workplace accident, management's response suggests a significant absence of emotional connection with the workers. This not only undermines trust but also signals a lack of managerial empathy and concern for employee safety and well-being. By portraying the incident as ‘advantageous’, it underscores the significance of safety measures while minimizing the emotional repercussions that the workers experienced. This approach firstly demonstrates a lack of empathy towards the workers who were impacted by the accident. This may have exacerbated negative emotions in employees leading to emotional climate of anger which may have led to emotional dysregulation in workers creating tensions and divisions.

This disempowering pathway is further shown through the surveillance and monitoring of employees. Here employees feel a threat to their autonomy and power at the

workplace. Employees expressed their anger towards the constant surveillance due to the feeling that it may have invaded their privacy and autonomy in the workplace. This discontent deliberately led to sabotaging the machinery against the perceived monitoring, as the following statements show:

There is the person who says, 'they are controlling me, well, the typical thing goes for me, they are controlling me'– (B6)

It can be a control of the operator. But never as a way of surveilling the employee you receive information about the tasks that are being done in the factory and with that, you have the information – (B7)

When we implement the computer system ourselves, it ultimately comes down to a sensor that counts boxes, whether it's passing or not. The hand then can move through the sensor, tricking it and boosting productivity – (B6)

Another crucial point to mention is that while in company A the employees regained power, saw themselves as owning the robot, management in company B expressed the opposite.

> *…There are things (robotization processes) that maybe the operator doesn't take ownership of, and they have to make them their own, at least a little bit...* – (B6)

Like the workplace accident, management once again placed the blame on the employee for not taking ownership of the machine. This indicates that management failed to implement practices that would foster a sense of psychological ownership among employees and strengthen their connection to the organization.

2.5 Discussion

As discussed in chapter 1, the specific pathways elicit particular emotions which then lead to behavioral outcomes. This chapter concentrated solely on the burdening, diminishing, and disempowering pathways. The fourth pathway was not a primary focus due to its limited relevance within the study's context. Given that employees were already operating independently at their own workstations, isolation was not a significant factor in explaining resistance in this work environment. Accordingly, the three selected pathways were prioritized to understand how IER strategies may influence resistant behavior. The crucial point of chapter 1 was to highlight the importance of emotions as the bases of employee resistance to digital transformation. This chapter has argued that the existing strategies employed to overcome resistance may not be sufficient to stall all forms of resistance. I propose interpersonal emotional strategies as a fruitful approach to tackle resistance and illustrate their operation in two case studies.

As aforementioned, the *burdening* pathway refers to a form of resistance that arises when individuals perceive a threat to their current or future employability. The findings indicate that when managers engage in perspective-taking, it helps normalize resistant emotions, making it easier to understand why employees may exhibit resistance. By actively acknowledging these concerns, managers were able to regulate employees' emotions through reappraisal of robotization. They reframed the situation, emphasizing that employees were not losing their jobs but transitioning to new roles—often with greater professional value and higher-end opportunities. This helped shift employees' perceptions, reducing feelings of burden and fostering a more positive outlook on the changes. The *diminishing* pathway demonstrates that resistance stemmed from emotions such as frustration and dissatisfaction with the technology. Management in Company A recognized that robotization could introduce work deficiencies, potentially disrupting established workflows and creating inefficiencies. To address this, they prioritized employee inclusion in the decision-making process, ensuring that workers had a voice in shaping how the technology was implemented. By directly involving employees in modifying the robots to make their tasks easier—rather than more challenging and frustrating—management helped transform resistance into engagement. The

disempowering pathway highlights the threat to employees' autonomy and power. The findings suggest that Company A effectively countered this threat through gamification, which energized employees and evoked positive emotions such as excitement and joy. By incorporating positive affective engagement (Niven et al., 2009), managers encouraged employees to reappraise their relationship with the robots—not as a force diminishing their control, but as a domesticated helper that they could subordinate. This reframing helped employees reclaim a sense of power, reinforcing their agency and fostering a more collaborative relationship with the technology.

Further, it is important to acknowledge that the regulation strategy of perspective taking occurs in both companies, as each recognizes and understands the emotions of their employees. Both are aware of specific emotions such as frustration and distress caused by robotization. However, the validation of these emotions occurs in only one of the companies. In company A, the management team not only acknowledges the employees' feelings but also takes steps to address and alleviate their concerns, demonstrating also normalization and acceptance of this emotion. Employees are not questioned or reprimanded for not silencing their negative emotions; rather, the management team accepts their role as emotional regulators of factory workers in the process of change. In contrast, company B does not validate the emotions of its employees. Despite understanding the emotions, it fails to respond to their emotions thus potentially dysregulating employees' emotions. The reason behind this is lies in the dichotomy of psychological safety and psychological danger. Perceived risk and distrust in the robot may lead to psychological danger in employees, which in turn may lead to an elicitation of negative emotions. When these negative emotions are then not regulated within an organizational change context, they may exacerbate and thus lead to a dysregulation in employees.

Therefore, understanding whether and how IER can mitigate resistance in employees is vital for organizations and management to benefit from a potential novel strategy. By conducting an empirical study of IER in relation to the robotization process, we developed an empirically grounded theoretical model of the how the three pathways elaborated in Chapter 1 may be regulated. In doing so, we have advanced a new perspective on resistance that looks beyond the initial upskilling/reskilling which has been the focus of past research. Further, by

examining how management cultivates and regulates the emotions of its employees rather than their rational cognitive reception of robots, we discovered that psychological safety is an important mechanism. As shown company A also strengthens the psychological safety of its employee through the various practices, which attenuate rejection. On the contrary, it can be assumed that employees in company B faced psychological danger which may have causes resistant behavior in them. Accordingly, this research is important to the context of organizational behavior because it examines the intricate process of how management navigates both positive and negative emotional responses of others'. The findings of this study provide a deeper understanding of the emotional landscape of managers by expanding on previous research and offering fresh perspectives, such as emphasizing the importance of psychological safety and psychological danger at the workplace.

As seen in figure Figure 2-7 employees may either experience psychological safety or psychological danger at the workplace. Psychological safety is important at the workplace because research suggests that when employees have high psychological safety, they engage in various positive workplace behaviors such as voicing (Lee et al., 2023). In contrast, psychological danger is a concept wherein employees perceive the environment as risky and consequently do not feel secure in engaging in various work-related behaviors. Therefore, psychological danger as opposed to safety may be related to higher motivation to resist robotization. It can be posited that psychological safety and psychological danger may function in the strategies as mechanisms with a mediating role in relation to workplace behavior, encompassing both positive and negative aspects. Future research should, therefore, investigate the mediating role that psychological safety, and particularly psychological danger, which has received limited attention in the literature, plays within the organizational context.

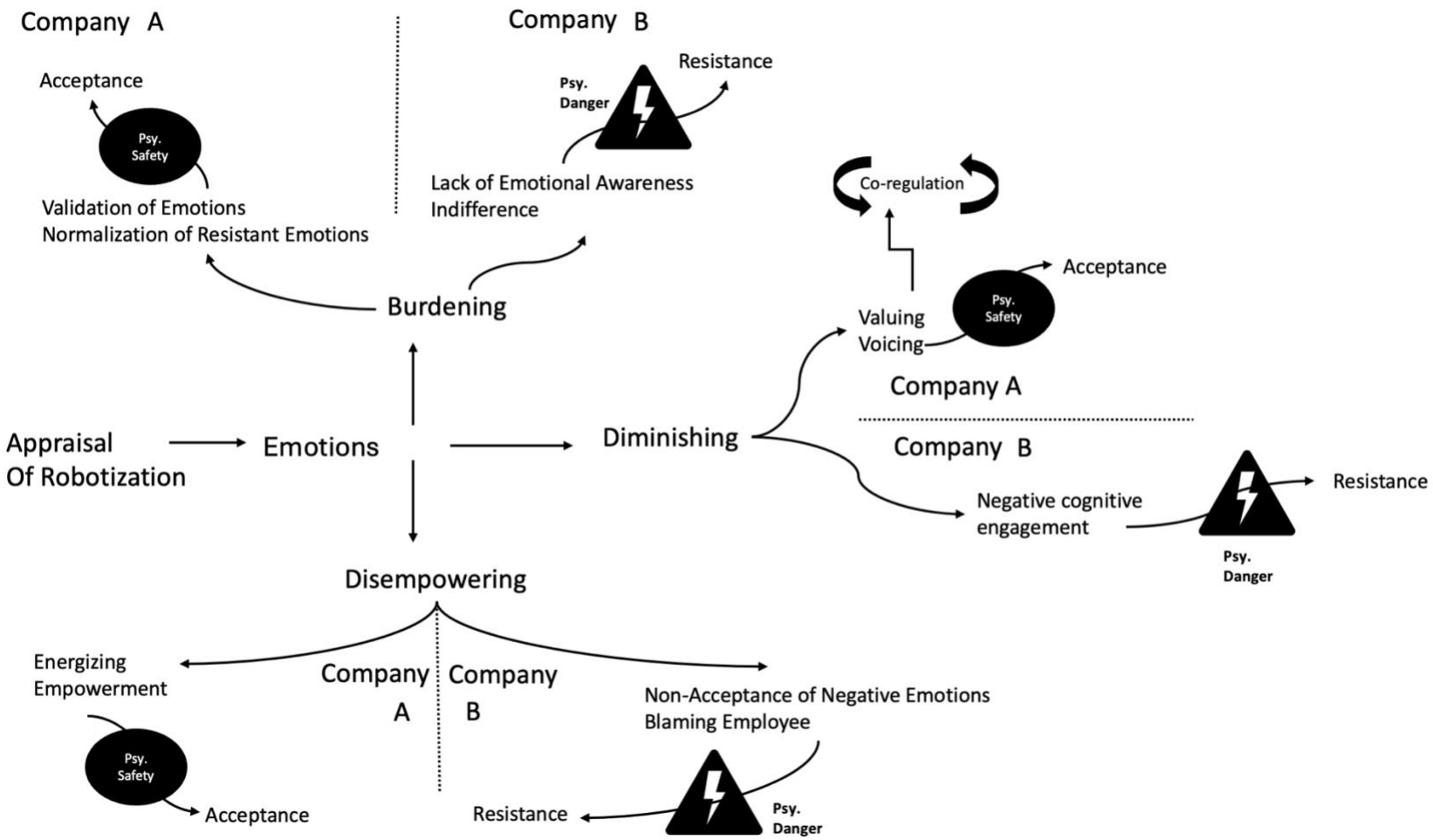
In the *diminishing pathway* we also suggested that management implemented a feedback loop in which employees through 'voicing' participate in the decision-making process and give opinions about the technology itself. Here we suggest that this feedback loop acted as a form of co-regulation by which employees also helped to regulate the emotions of managers. Against this background, we move beyond an understanding of one-way interaction between leader and follower (Vasquez et al., 2020) and elucidate the reciprocal

relationships between managers and employees. In this regard, both employees and managers helped each other to regulate their respective emotions and behavioral outcomes.

In sum, this chapter examined IER strategies in two contrasting cases, emphasizing the importance of emotions within the workplace and how they might either lead to acceptance or rejection of robotization.

The findings show that displayed perspective taking by management is a crucial component in attenuating potential resistant behaviors. Further, the findings also led to unearth the important role that psychological safety plays within the IER context. That is why, in the next chapter we will turn our attention on employees and how they perceive a manager that engages in displayed perspective taking. Chapter 3 involves a quantitative experimental study examining whether displayed perspective taking by management through the mediating effect of psychological safety may cause less resistant behavior in employees.

Figure 2-7 Pathways



Chapter 3 NAVIGATING THROUGH THE SHADES OF MANAGEMENT – AN EXPERIMENTAL STUDY

3.1 Conceptual Background

In Chapter 2, the findings of the qualitative case study suggest that managers' displayed perspective taking, and validation of employees' emotions may effectively regulate employees' emotions. This in turn, may engender employees' acceptance and lead to a decrease in resistance to change. Indeed, displayed perspective taking seemed to establish the differences between case A and case B. Perspective taking requires seeing something from another person's point of view and experiencing the situation from their view (Johnson, 1975).

However, the collected evidence did not allow for the establishment of a causal relationship between the use of these strategies and employees' reappraisal of the robotization transformation process, the attenuation of negative emotions and consequently the reduction in resistant behaviors. This chapter intends to redress this limitation by providing evidence of the role of perspective-taking as an interpersonal emotional regulation strategy for curbing employee resistance, both active and passive. Further, this chapter also offers insight about how managers can help employees to manage the appraisal of innovations in a digital age. Moreover, this study also examines the psychological mechanisms whereby this strategy may curb resistance. In this chapter, I conceptualize and test in an experimental study whether managers' communication of perspective taking may weaken cognitive, emotional, and behavioral resistance in employees and whether these effects occur to increase psychological safety. Two broad questions guide this chapter (a) *Do perspective taking by managers lead to less resistance in employees and (b) does displayed perspective taking mediate this effect?*

As conceptualized in chapter 1 and discussed in chapter 2, one of the major challenges that an organization faces when undergoing any change is the negative emotional reaction of employees (Turnbull, 2002). IER strategies may help in reducing employees' rejection, insofar as they may attenuate these negative emotions. This chapter focuses on the displayed IER strategy of perspective taking. Perspective taking is "the ability to understand how a situation appears to another person and how that person is reacting cognitively and emotionally to the situation" (Johnson, 1975, p. 241). In turn, emotional validation is similar to perspective taking as it is the accurate and non-judgmental communicative reference to another individual's

emotion or feeling (Lambie and Lindberg, 2016). Here I use emotional validation as part of perspective taking. Further, I treat it as displayed perspective taking, as opposed to an intrapersonal ability. My focus of attention is not whether managers possess this ability but rather whether the communication of perspective-taking (that the manager understands the receiver's point of view) reduces resistance among employees. Thus, I relax any assumption that this communication matches or corresponds to their actual experienced empathy.

i) Theoretical Framework

Empirical research has shown that communicated or displayed perspective taking has several benefits, such as higher trust among individuals as well as stronger connections between co-workers (Dutton et al., 2007; Frost et al., 2000; Powley, 2009). Further, social exchange theory (Blau, 1964) also provides a foundation for exploring the relationship between emotion validation/perspective taking and a potential decrease in resistance. This theory postulates that whenever individuals are in relationships, they exchange resources that benefit each other (Cropanzano and Mitchell, 2005). Therefore, social exchange theory assumes that individuals expect their helpful actions to be reciprocated. When parties engage in reciprocal interactions, they build trust and a sense of obligation towards each other (Colquitt et al., 2014; Cropanzano and Mitchell, 2005; Koopman et al., 2015).

Building on that it can also be said that individuals modify their behaviors based on prior emotional experiences (Collins, 2004). Therefore, individuals may not only change their behavior based on the social exchange context but also be influenced to act in a certain way due to their own emotional experiences within the relationship (Spreitzer et al., 2005). Previous research has suggested that emotions play a significant role in social exchange processes, and the emotional outcomes of previous exchanges can have a significant impact on an individual's future behavior (Lawler et al., 2008). Hence, when employees have a manager that validates their emotions, firstly they will feel more respected and valued and secondly these emotional positive experiences may guide the future behavior, in this case leading to less resistance to change. Therefore, when managers validate their employees' emotions, their employees are likely to feel obligated to reciprocate the observed managers' benevolence thus reducing the possibility of hurting these leaders or engaging in counterproductive work behaviors that also may damage the organization (Cropanzano and

Mitchell, 2005). These arguments suggest that managers' displayed perspective taking weakens resistance in workers.

A potential psychological mechanism to explain why displayed perspective taking/emotional validation may modify appraisals of change and their accompanying emotions is psychological safety. Psychological safety refers to "the extent to which individuals feel secure and confident in their ability to manage change" (Newman et al., 2017, p.523). A potential psychological mechanism to explain why displayed perspective taking/emotional validation may modify appraisals of change and their accompanying emotions is psychological safety. The connection between psychological safety and emotions is particularly noteworthy, as research has demonstrated that psychological safety can predict emotional responses in people (Lee, 2021; Serhan et al., 2024; Zhou and Chen, 2021,).Research indicates that the level of psychological safety provided by an organization directly affects employees' emotional states, such as joy or nervousness, in the workplace (Lee, 2021; Rozman and Tominc, 2022; Serhan et al., 2024). One study postulate that low psychological safety is linked to heightened emotional distress in employees during times of change (Rozman and Tominc, 2022). Accordingly, these studies suggest that psychological safety influences emotional responses in employees.

Because psychological safety is grounded on trusting and supportive interpersonal relationships at the workplace (Kahn, 1990), managers' behaviors are crucial for fostering psychological safety in employees. For instance, empirical research has demonstrated that management support, trustworthiness and behavioral integrity impact employee perceptions of psychological safety (May et al., 2004; Palanski and Vogelgesang, 2011). Moreover, extant scholarship has also demonstrated that psychological safety plays a mediating role in the impact of management actions on followers' outcomes such as organizational identification (Liu et al., 2016), voice behavior (Walumbwa and Schaubroeck, 2009), employee involvement (Carmeli et al., 2010) and job engagement (Frazier et al., 2017). It can thus be suggested that psychological safety emerges when employees perceive a trusted environment. This trust would then decrease negative emotions thus causing less resistant behavior in employees.

ii) Hypotheses Development

This study focuses firstly on dependent variables that encompass resistant behavior. Firstly, direct effects are being studied but more importantly this study aims to test the mediation of psychological safety to appease the emotions (aligned with the specific pathways as elaborated in Chapter 1) which in turn affect resistant behavior. Resistant behavior will be the result of the appraisal of threat and thus employees may engage in such behavior at the workplace as also evidenced in the findings of chapter 2.

Accordingly, as aforementioned the dependent variables are passive resistance (in the form of withdrawal and turnover intention) and active resistance in the form of sabotage. I chose these variables because they are well suited to represent resistant behavior at the workplace (Rivard and Lapointe, 2012). Passive and active resistant behaviors are deliberate acts by employees that harm the organization (Marcus et al., 2016). This type of behavior has also been mentioned in relation to changes implemented in the organization, especially linked to work stressors that are positively related to counterproductive work behavior such as active or passive resistance (Meier and Spector, 2013). We defend that such behavior is intentional and associated with negative emotions such as anger or fear because of a change (Berkowitz, 1998; Spector et al., 2006). In the context of organizational change, as proposed in chapter 1, robotization at the workplace is a source of threat to the individual. Therefore, passive and active behaviors such as withdrawal/turnover intentions or sabotage respectively will be the result of the appraisal of threat and the emotions of fear and anger that this threat elicits.

Withdrawal behavior is a type of passive resistant behavior (Fugate et al., 2010) and it is one dependent variable studied in this chapter. It encompasses behaviors that focus on limiting one's time at work. Withdrawal behaviors are "physical removal from a particular workplace, either for part of a day, an entire day or permanently" (Johns, 2002, p.233). Accordingly, employees limit their own time at work. This behavior can take the shape of lateness or absenteeism (Zimmerman et al., 2016), time stealing, or taking longer breaks than allowed (Spector et al., 2006). Because organizational change such as robotization may increase job uncertainty and pose a threat to job sustainability we propose that it may motivate employees to engage in withdrawal behaviors.

Turnover intention the second dependent variable considered. It is also a type of passive behavior because it reflects the internal dissatisfaction of the employee without direct confrontation or active opposition and may manifests silently such as through withdrawal or absenteeism (Fugate et al., 2010). It can be defined as "the subjective probability that an individual will leave his or her organization within a certain period of time" (Zhao et al., 2007, p. 651). The decisions made by employees to stay or leave their organization are influenced by various factors, such as their level of commitment to change or the uncertainty that arises from change (Bordia et al., 2004; Rafferty and Griffin, 2006). Consistent with the unfolding model of turnover (Lee et al., 1999) the reason to leave the organization may be motivated by a single event that can be characterized as a shock. We propose that because of the threat that robotization entails, it may constitute a shock for employees (Lee et al., 1999) and motivate their decision to leave the organization. Sabotage is the third dependent variable examined. Here we categorize it within the active resistant behavior. Sabotage at the workplace focuses on "damage, disrupt or subvert the organization's operations for the personal purposes of the saboteur" (Crino, 1994, p.312). Therefore, employees may restore to delaying the production, damaging the property or harming working relationships (Crino, 1994). Extant scholarship has postulated that active resistance in the form of sabotage may stem from feelings of powerlessness or injustice (Ambrose et al., 2002).

I will now turn to the specific hypothesis that are based on the developed pathways from chapter 1. It should be clarified here that this chapter will examine only two pathways: the burdening pathway and the disempowering pathway. The reason behind this is because these two pathways encompass contrasting negative emotions, namely fear and anger. Because of the action tendencies associated with each of these emotions (avoidance and approach, respectively) (Marsh et al., 2005), we would expect differences in how curbing these emotions influence the two behavioral forms of resistance theorized (passive and active, respectively). The diminishing pathway is posited to trigger frustration. Yet, scholarship has acknowledged that frustration shares similarities with aggression (Dollard et al., 1936), therefore also being closely aligned to the emotion of anger (Wranik and Scherer, 2009). Consequently, we chose not to test this pathway due to its conceptual overlap with anger. Notwithstanding, testing the influence of displayed perspective taking on fear and anger could

help us infer whether it may aptly curb frustration, thus drawing inferences for the diminishing pathway.

3.1.1 Burdening Pathway

As explained in Chapter 1, the burdening pathway occurs when employees appraise a threat to future employability. This in turn leads to experiencing emotions such as fear or anxiety. Consistent with research (Kish-Gephart et al., 2009; Sun and Deng, 2024) such emotions elicited may cause passive resistance. Yet what also stood out from the qualitative data based on chapter 2, is that displayed perspective taking may enhance the psychological safety of the employee. Here passive resistance is defined as withdrawal behavior and turnover intentions in employees. Based on the arguments and evidence presented in chapter 2, I formally hypothesize:

Hypothesis 1a: Employees whose managers demonstrate perspective taking will exhibit decreased passive resistance behavior in the form of (i) lower withdrawal behavior and (ii) lower turnover intentions compared to employees whose managers demonstrate indifference.

Hypothesis 1b: The relationship between managerial perspective taking and withdrawal behavior as well as turnover intentions is serially mediated by psychological safety and fear. Specifically, managers who display perspective taking will enhance psychological safety, which in turn will decrease fear, leading to lower withdrawal behavior and turnover intentions.

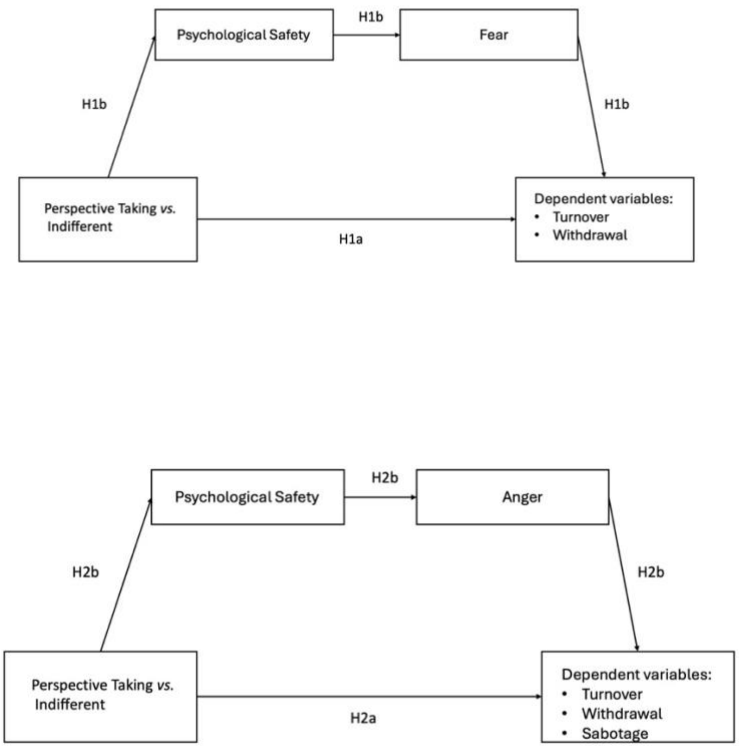
3.1.2 Disempowering Pathway

The disempowering pathway focuses on an appraisal of threat towards one's identity thus eliciting emotions such as anger. Anger being an approach emotion, it may lead to active resistant work behavior such as sabotage. Furthermore, this study also acknowledges existing research that has identified withdrawal tendencies associated with anger (Zinner et al., 2008). Consequently, it is hypothesized that anger may precipitate also other employee behaviors such as turnover intention or withdrawal within organizational contexts. As such I hypothesize:

Hypothesis 2a: Employees whose managers demonstrate perspective taking will be less likely to engage in active resistant behavior, specifically (i) sabotage, and less likely to engage in passive resistant behaviors, including (ii) withdrawal and (iii) turnover intentions compared to employees whose managers demonstrate indifference.

Hypothesis 2b: The relationship between managerial perspective taking and active resistance (sabotage) and passive resistance (withdrawal and turnover intentions) is serially mediated by psychological safety and anger. Specifically, managers who display perspective taking will increase psychological safety, which will subsequently reduce anger, ultimately leading to lower sabotage, withdrawal, and turnover intentions.

Figure 3-1 Model H1 and H2



3.2 Method

3.2.1 Data collection procedure

To test our hypotheses, we conducted a between subjects online experiment with two conditions (manager's IER perspective taking versus indifference). For short, we will refer hereafter to the concerned and indifferent manager scenarios. We used the services of Prolific to collect our data on a sample of US employees working full-time. The scenarios were inspired in the findings of two case studies from chapter 2 and refined in a pre-test with 40 participants recruited via Qualtrics.

After reading the description of the study and providing consent, all participants read an introductory paragraph:

> *You are working in a manufacturing company that assembles airplane parts for the aviation industry. You have just been called to a meeting with your production-plant manager that leads the factory you work at. After a brief introduction, your manager announced that: "Starting from next month on, the company will introduce robotics in the factory." Your manager explained that the reasons to introduce this robot are based on helping the company be more competitive, cutting costs, and increase value for customers.*

They were then randomly assigned to one of the two experimental conditions. In the perspective-taking manager scenario, participants additionally read:

> *Your manager further told you that: "We are well aware of the hard work you do every day, with many hours in the factory, dealing with physical and mental strain, I can imagine how tiring this might be." Your manager further told you: "If I put myself in your shoes, I see why you might feel threatened…and I understand that you may feel anxious and worried about this robot, but I can assure you that you will not be displaced or suffer from this change. On the contrary, our hope is that you have better working conditions." After presenting the implementation plan, the meeting was over and everyone went back to work.*

In the indifferent manager scenario, participants read:

> *Your manager further told you that: "We are well aware that you are all used to work in your own way; in the end, it's just repetitive work, nothing more." Your manager further told you: "I can tell you that this project was approved by the director, according to the company vision. This is all you need to know. In fact, the company's goal is that this robot will allow you to produce more in less time." After presenting the implementation plan, the meeting was over and everyone went back to work.*

Next, participants completed a short survey assessing their emotions, intentions to leave or sabotage, the manipulation check, and demographic characteristics.

3.2.2 Participants

An independent sample of 203 participants was recruited from Prolific in exchange for a monetary compensation. Our final sample consisted of 203 participants. We introduced three attention checks in the questionnaire. The attention checks were introduced with the dependent variables. The items were: "We just want you to mark number two", "Please mark extremely likely" and "If you are reading please mark slightly unlikely". None of the participants failed any of these attention checks. Participants were randomly assigned to one of the scenarios with balanced samples of 49.8% in the indifferent scenario and 50.2% in the compassionate one. No significant differences were observed between groups in gender, age or education as shown in Table 3-1.

Regarding the final sample, 51.7% were male (48.3% female). The mean age was 39.5 years old (SD = 10.6). 8% of participants were between 18 and 24 years old, 28% of participants were between 25 and 34 years old, 33% of participants between 35 and 44, 23% between 45 and 54 years old, 7% between 55 and 64 years old, and 2% above 65. 42.4% of the participants possessed a 4-year College Degree, followed by 18.7% a Masters Degree. 15.8% of participants possessed some college degree and 7.4% only a high school degree. 5.9% of participants had a Doctoral Degree and 2% a Professional Degree such as J.D or M.D. 14.3% of the participants worked in a health care or social assistance industry, 12.3% in the educational sector, 11.8% in the information technology sector, 10.3% in the finance industry,

9.4% in the manufacturing industry and the rest of the participants are employed in various industries such as real estate, construction, retail or accommodation.

Table 3-1 Participants

Gender	**Indifferent (n=101)**	**Compassion (n=102)**	**Chi-Square Test (p-value)** 0.621
Male	54 (53.5%)	51 (50.0%)	
Female	47 (46.5%)	51 (50.0%)	
Age Category	**Indifferent (n=101)**	**Compassion (n=102)**	**Chi-Square Test (p-value)** 0.386
18-24	4 (4.0%)	12 (11.8%)	
25-34	27 (26.7%)	30 (29.4%)	
35-44	35 (34.7%)	32 (31.4%)	
45-54	25 (24.8%)	21 (20.6%)	
55-64	8 (7.9%)	6 (5.9%)	
65+	2 (2.0%)	1 (1.0%)	
Level of education completed	**Indifferent (n=101)**	**Compassion (n=102)**	**Chi-Square Test (p-value)** 0.637
Less than High School	9 (8.9%)	6 (5.9%)	
High School/GED	19 (18.8%)	13 (12.7%)	
Some College	7 (6.9%)	9 (8.8%)	
2 Year College Degree	44 (43.6%)	42 (41.2%)	
4 Year College Degree	16 (15.8%)	22 (21.6%)	
Masters Degree	4 (4.0%)	8 (7.8%)	
Doctoral Degree	2 (2.0%)	2 (2.0%)	
Industries	**Indifferent (n=101)**	**Compassion (n=102)**	**Chi-Square Test (p-value)** 0.116
Forestry, fishing, hunting or agriculture support	1 (1.0%)	1 (1.0%)	
Real estate or rental and leasing	2 (2.0%)	0 (0.0%)	
Professional, scientific or technical services	7 (6.9%)	8 (7.8%)	
Management of companies or enterprises	3 (3.0%)	4 (3.9%)	

Construction	6 (5.9%)	5 (4.9%)	
Admin, support, waste management or remediation services	0 (0.0%)	3 (2.9%)	
Manufacturing	9 (8.9%)	10 (9.8%)	
Educational Services	12 (11.9%)	13 (12.7)%	
Wholesale trade	2 (2.0%)	0 (0.0%	
Health Care or social assistance	10 (9.9%)	19 (18.6%)	
Retail trade	6 (5.9%)	5 (4.9%)	
Arts, Entertainment or recreation	2 (2.0%)	5 (4.9%)	
Transportation or warehousing	6 (5.9%)	1 (1.0%)	
Accommodation or food services	0 (0.0%)	2 (2.0%)	
Information	11 (10.9%)	13 (12.7%)	
Other services (except public administration)	12 (11.9%)	3 (2.9%)	
Finance or insurance	12 (11.9%)	9 (8.8%)	
Unclassified establishments	0 (0.0%)	1 (1.0%)	

3.2.3 Measures

All measures were based on scales adapted from prior literature. Responses to all items were obtained using a 7-point Likert scale ranging from 1 (extremely unlikely) to 7 (extremely likely). The independent variable (IER) was manipulated in the stimuli and coded as 1 for manager who displays perspective taking and 0 for the indifferent manager. The mediators were psychological safety, fear emotion (jittery, nervous, distressed, scared and afraid) and anger emotion (hostile, upset and irritable). As controls, we used gender and age. All measures exceeded the thresholds of reliability and validity (see Table 3-2 Validity of Scales).

Dependent variables

Withdrawal

A four-item scale developed by Spector et al., (2006) was used to measure withdrawal behavior. Sample items include "Come to work late without permission" and "Stay home from work." (α = .91; CR= .91; AVE = .82)

Turnover Intention

A three-item scale developed by Skelton et al., (2020) was used to measure turnover intention. A sample item is "I often think of leaving this organization" (α = .94; CR = .94; AVE = .84).

Sabotage

A three-item scale developed by Spector et al., (2006) was used to measure sabotage intentions. A sample item include "Purposely damage a piece of robot equipment" (α = .93; CR = .93; AVE = .82)

Mediators

Psychological Safety

A six-item scale developed by Edmondson and Woolley (2003) was used to measure psychological safety. The measure uses a 7-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). A sample item is "If I make a mistake in this job, it is often held against me".

Negative Emotions (PANAS) for Fear and Anger

The Negative Affect scale was also used to measure negative emotions of participants. It consists of 8 emotions (Watson et al., 1988) such as being angry, distressed or nervous. Consistent with our theorization and with extant scholarship (Reizer et al., 2019), we calculated a measure for fear and anger respectively.

Fear

Fear was measured with items taken from the PANAS scale. It was calculated by averaging responses to the items jittery, nervous, distressed, scared and afraid ($\alpha = 0.90$; CR = 0.90; AVE = 0.66).

Anger

Anger was also measured with items taken from the PANAS scale. It was computed by averaging the items hostile, upset and irritable ($\alpha = 0.81$; CR = 0.82; AVE = 0.60).

Control Variables

We used age (measured in years) and gender (0 = men, 1 = women). These controls were used, as previous research has shown that they may influence the experience of emotions (Livingstone and Isaacowitz, 2021; Nolen-Hoeksema, 2012)

Table 3-2 Validity of Scales

Variables	Item(s)	Factor Loading	Cronbach's Alpha	AVE	Composite Reliability
Sabotage	1. Purposely waste your employer's materials/supplies. 2. Purposely damage a piece of robot equipment or any other property. 3. Purposely dirty or litter your place of work.	1. .872 2. .923 3. .913	.93	.82	.93
Withdrawal	1. Come to work late without permission. 2. Stay home from work and say you are sick but are not. 3. Take a longer break than you are allowed to take. 4. Leave work earlier than you are allowed to.	1. .737 2. .815 3. .936 4. .888	.91	.72	.91
Turnover Intention	1. I often think of leaving the organization. 2. It is very possible that I will look for a new job next year. 3. If I may choose again, I will choose to work for another organization.	1. .943 2. .932 3. .874	.94	.84	.94
Psychological Safety	1. If I make a mistake in this job, it is often held against me. (R) 2. It is difficult to ask others in this department for help. (R) 3. My manager often encourages me to take on new tasks or to learn how to do things I have never done before. 4. If I was thinking about leaving this company to pursue a better job elsewhere, I would talk to my manager about it. 5. If I had a problem in this company I could depend on my manager to be my advocate. 6. Often when I raise a problem with my manager, she/he does not seem very interested in helping me find a solution. (R)	1. .665 2. .712 3. .746 4. .584 5. .828 6. .604	.84	.48	.84
Fear and Anger	**Fear** – 1.Distressed **2.**Scared 3.Nervous 4.Jittery **5.**Afraid **Anger** – 1.Upset 2. Hostile 3. Irritable	.844 .889 .823 .689 .869 .854 .677 .787	.90 .81	.67 .60	.90 .82

3.3 Analysis

The data were analysed with structural equation modeling (SEM) using AMOS version 26. To estimate and test the conceptual model and confirm the discriminant validity of our measurement model, we carried out confirmatory factor analyses (CFA). The mediated relationships were tested, and indirect and total effects computed with bootstrapping 95% confidence intervals using the bias corrected percentile method (Preacher and Hayes, 2008).

3.4 Results

3.4.1 Descriptive Statistics

Mean, standard deviation, and correlations among variables are shown in Table 3-3. As expected, withdrawal and sabotage were highly correlated (r = .61, p > .001), as well as turnover and psychological safety (r = -.58, p > .001), providing initial support for the idea that psychological safety is related to turnover.

Table 3-3 Descriptive Statistics

Variables	M (SD)							
	Displays Perspective Taking	*Indifferent*	*Y1*	*Y2*	*Y3*	*X1*	*X2*	*X3*
Sabotage (Y1)	1.55 (.98)	1.60 (1.09)						
Withdrawal (Y2)	2.12 (1.36)	2.36 (1.53)	.61**					
Turnover (Y3)	4.51 (1.77)	5.42 (1.43)	.15*	.27**				
Psychological Safety (X1)	4.23 (1.12)	3.57 (1.14)	-.08	-.17*	-.58**			
Fear Emotions (X2)	2.74 (1.04)	3.11 (1.05)	.89	.02	.52**	-.27**		
Anger Emotions (X3)	2.31 (1.04)	2.61 (1.02)	.20**	.15*	.54**	-.33**	.79**	

Turnover t (201) = 4.00***; Psychological Safety t (201) = -4.16***; Fear t (201) = 2.44*; Anger t (201) = 2.08*

$p < .05$ = *; $p < .01$ = **; $p < .001$ ***

3.4.2 Manipulation Check

An 8-itemed, 7-point Likert scale question was used as a manipulation check. Four items were used for the concerned manager scenario ($\alpha = .90$), and four about the indifferent manager scenario ($\alpha = .90$)

Concerned - Perspective Taking Manager	Indifferent Manager
My manager was aware of the hard work I do	My manager ignored and dismissed the hard work that I do
My manager acknowledged and identified emotions that I may feel following the announced decision	My manager clearly prioritized company's goals over my own well being
My manager discussed the challenging nature of my work	My manager seemed unconcerned about what I might feel following the announced decision
My manager explained clearly that the robotization will make tasks easier for me	My manager lacked empathetic feelings and seemed indifferent towards me

The mean differences of the two scenarios demonstrate that the manipulations were effective: the mean of the perceived perspective taking used by the manager was significantly higher in the perspective taking manager condition than in the indifferent manager scenario ($M_{concerned}$=5.42, SD=0.89 t(201) = 13.26, p <.001; $M_{indifferent}$ = 3.24, SD = 1.41, t(201) = 10.90, p <.001). Similarly, there was a significant difference in the mean of the perceived indifference expressed by the manager in the indifferent manager condition than in the perspective taking manager condition ($M_{concernced}$ = 2.25, $M_{indifferent}$= 4.59, t (201) = 11.50, p < .001). Further supporting the effectiveness of the manipulation, participants in the indifferent manager condition perceived that the manager lacked more empathetic feelings than participants in the perspective taking condition ($M_{concernced}$ = 2.72, $M_{indifferent}$= 4.82, t (201) = 9.39, p < .001). Overall, our manipulation was effective.

3.4.3 Measurement Model

Based on correlations in Table 3-3 Descriptive Statistics, previous to testing the measurement model, a CFA was conducted to determine was conducted to determine the discriminant validity of our model. We tested a model with six independent factors (fear, anger, psychological safety, sabotage, turnover, withdrawal) against various alternative models. The six-factor model has the following fit statistics: χ2 = 508.155, df = 236, p < .01, RMSEA = .075, CFI = .926, TLI = .913 indicating a good model fit. This model had a significant better fit than the alternative model (Δχ2 = 36.582, df = 5, p < .001) which showed a poorer fit (χ^2 = 544.737, df = 241, p < .01, RMSEA = .08, CFI = .917, TLI = .905).

3.4.4 Burdening Pathway

As previously stated, two models were executed for each of the three pathways. The first model excluded the covariates gender and age, while the second model included these variables.

3.4.4.1 Model 1

With model 1a, we test the Hypothesis 1a of direct effect between displayed perspective taking and passive resistance. We tested a structural model with 5,000 bootstrap samples. Results show that this model presented an acceptable fit (χ^2 = 330.309; *df* = 145; GFI = .850; IFI = .928; TLI = .915; CFI = .928; RMSEA = 0.08). As can be seen in Figure 3-2 Model 1 a and b, there is a direct and significant relationship between a manager who displays perspective taking and lower turnover intentions in an employee (-.234***). Yet, there is no direct significant effect on withdrawal behavior. Then, Hypothesis 1a is supported for turnover but not for withdrawal.

In model 1b we test Hypothesis 1b whether psychological safety serves as a serial mediator that alleviates fear, thereby reducing passive resistance. The findings (see Figure 3-2 Model 1 a and b) demonstrate that the relationship between managers who display perspective-taking and employees' turnover intentions is fully mediated by psychological safety and emotions. First, there is a significant positive correlation between perspective-taking managers and psychological safety (.320***), suggesting that such managers enhance their employees' sense of psychological safety. In turn, a significant negative correlation exists between psychological safety and fear: higher levels of psychological safety are linked to lower levels of fear (-.331***). Moreover, the results revealed a significant total indirect effect of perspective taking on turnover intentions through psychological safety and fear (β = -0.243, 95% CI [-0.355, -0.102]). The serial mediation effect through both psychological safety and fear was significant (β = -0.177, 95% CI [-0.295, -0.083]), supporting the hypothesized mediation model. Further, the overall model accounted for 35.5% of the variance in turnover intentions (R^2 = 0.355), indicating a large effect size (Cohen's f^2 = 0.550). Additionally, the direct effect of fear on turnover intentions was strong (β = 0.534, 95% CI [0.420, 0.649]).

However, while psychological safety reduces fear, it does not significantly influence withdrawal behavior. The results revealed that the serial mediation effect through both psychological safety and fear was non-significant (β = -0.016, 95% CI [-0.073, 0.030]). Only the indirect effect of psychological safety was significant (β = -0.106, 95% CI [-0.205, -0.046]). Further, the model explained 0.76% of the variance in withdrawal behavior (R^2 = 0.0076), indicating a very small effect size (Cohen's f^2 = 0.007). Consequently, fear does not mediate the relationship between psychological safety and withdrawal. In summary, managers who exhibit perspective-taking reduce turnover intentions through psychological safety (-.243*), but this does not extend to reducing withdrawal behavior. Therefore, Hypothesis 1b is also partially supported.

Figure 3-2 Model 1 a and b

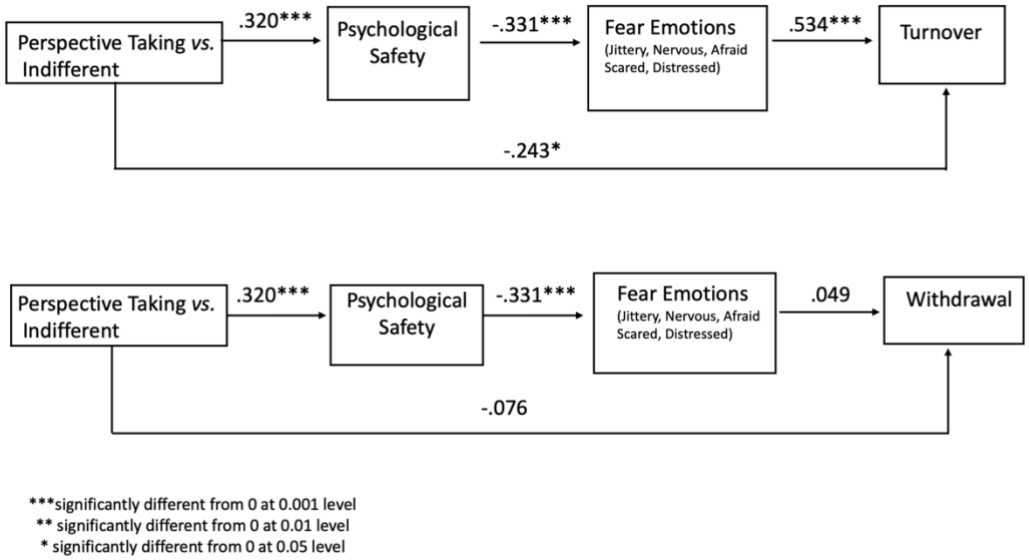


Table 3-4 Direct and Total effects. In brackets, 95% confidence interval, shadowed nonsignificant

	Standardized indirect effects	Standardized direct effects	Standardized total effects
Psy. Safety on Turnover Intention	-.177 (-.295, -.083)	0 (0,0)	-.177 (-.295, -.083)
Concerned/Indifferent on Turnover Intention	-.057 (-.125, -.023)	-.187 (-.301, -.061)	-.243 (-.355, -.102)
Concerned/Indifferent on Fear	-.106 (-.205, -.046)	0 (0,0)	-.106 (-.046, -.205)
Psy. Safety on Fear	0	-.331	-.331

	(0,0)	(-.494, -.171)	(-.494, -.171)
Fear on Turnover Intention	0 (0,0)	.534 (.420, .649)	.534 (.420, .649)
Psy. Safety on Withdrawal	-.016 (-.073, .030)	0	-.016 (-.073, .030)
Concerned/Indifferent on Withdrawal	-.005 (-.027, .010)	-.070 (-.212, .078)	-.076 (-.211, .074)
Fear on Withdrawal	0	.049 (-.097, .204)	.049 (-.097, .204)

3.4.4.2 Model 1 a and b with covariates

Another model was run adding gender and age as covariates as shown in

Figure 3-3 Model 1 with Covariates. The structural model presented acceptable fit (χ^2 = 369.995; *df* = 177; GFI = .8501; IFI = .926; TLI = .911; CFI = .925; RMSEA = 0.07). As it can be inferred from the

Figure 3-3 Model 1 with Covariates, gender has a nonsignificant effect on either withdrawal or turnover intentions. Similarly, age does not significantly influence turnover intentions. However, age has a statistically significant negative effect on withdrawal behavior (-.285***), indicating that as employees grow older, their likelihood of engaging in withdrawal behavior decreases. This suggests that younger employees are more prone to withdrawal behavior compared to their older counterparts.

Figure 3-3 Model 1 with Covariates

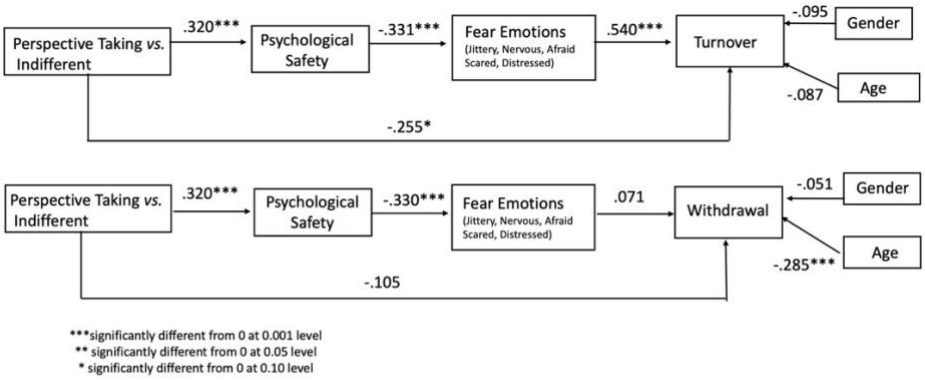


Table 3-5 Direct and Total effects. In brackets, 95% confidence interval, shadowed nonsignificant

	Standardized indirect effects	Standardized direct effects	Standardized total effects
Psy. Safety on Turnover Intention	-.178 (-.296, -.085)	0 (0,0)	-.178 (-.296, -.085)
Concerned/Indifferent on Turnover Intention	-.057 (-.112, -.023)	-.198 (-.315, -.078)	-.255 (-.389, -.129)
Concerned/Indifferent on Fear	-.106 (-.189, -.044)	0 (0,0)	-.106 (-.189, -.044)
Psy. Safety on Fear	0 (0,0)	-.330 (-.489, -.178)	-.330 (-.489, -.178)
Fear on Turnover Intention	0 (0,0)	.540 (.423, .658)	.540 (.423, .658)
Psy. Safety on Withdrawal	-.023 (-.083, .018)	0	-.023 (-.083, .018)
Concerned/Indifferent on Withdrawal	-.007 (-.028, .006)	-.097 (-.230, .049)	-.105 (-.237, .040)
Fear on Withdrawal	0	.071 (-.072, .216)	.071 (-.072, .216)
Age on Turnover Intention	0	-.087 (-.211, .024)	-.087 (-.211, .024)
Gender on Turnover Intention	0	.095 (-.026, .220)	.095 (-.026, .220)
Age on Withdrawal	0	-.285 (-.402, -.152)	-.285 (-.402, -.152)
Gender on Withdrawal	0	-.051 (-.188, .094)	-.051 (-.188, .094)

3.4.5 Disempowering Pathway

3.4.5.1 Model 2

Hypothesis 2a stated that individuals exposed to a manager who displays perspective taking will tend to have lower withdrawal and turnover and sabotage intentions than individuals exposed to a manager who displays indifference. The structural model for Hypothesis 2 presented acceptable fit ($\chi 2 = 440.427$; df = 157; GFI = .832; IFI = .898; TLI = .875; CFI = .897; RMSEA = 0.09). Direct effects are not observed, except for turnover: displayed perspective-taking directly reduces turnover intentions (-.175*) (see Figure 3-4 Model 2 a and b). Thus, Hypothesis 2a is partially supported.

As expected, perspective taking increases psychological safety which in turn influences anger with a strong direct effect (β = -0.610, 95% CI [-0.981, -0.375]). Further, anger had a strong direct effect on turnover intentions (β = 1.339, 95% CI [0.960, 2.891]), supporting the hypothesis that higher anger levels lead to turnover intentions. The model explained 47.82% of the variance in turnover intentions ($R^2 = 0.4782$), with a very large effect size (Cohen's $f^2 = 0.916$), highlighting the significant role of psychological safety and anger in shaping turnover intentions. Similarly, anger had a moderate direct effect on withdrawal (β = 0.494, 95% CI [0.142, 0.971]). The model explained 35.7% of the variance in withdrawal ($R^2 = 0.357$), with a large effect size (Cohen's $f^2 = 0.554$). For sabotage behaviors, psychological safety had a significant total effect on sabotage (β = -0.243, 95% CI [-0.511, -0.094]), confirming that lower psychological safety fosters active resistance. Additionally, anger significantly predicted sabotage behaviors (β = 0.399, 95% CI [0.067, 0.746]). The model explained 22.9% of the variance in sabotage ($R^2 = 0.229$), with a moderate effect size (Cohen's $f^2 = 0.297$). Further, although there is no direct significant relationship between perspective taking and withdrawal (.301***) and sabotage (.304***), the indirect paths are statistically significant; therefore, it can be concluded that Hypothesis 2b is supported.

Figure 3-4 Model 2 a and b

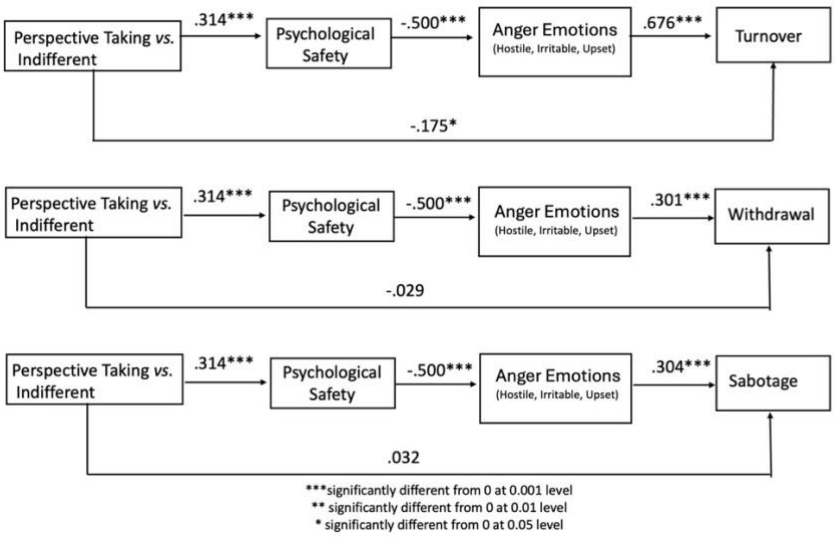


Table 3-6 Direct and Total Effects, in brackets, 95% confidence interval, shadowed non-significant

	Standardized indirect effects	Standardized direct effects	Standardized total effects
Psy. Safety on Withdrawal	-.301 (-.604, -.087)	0 (0,0)	-.301 (-.604, -.087)
Concerned/Indifferent on Withdrawal	-.127 (-.284, -.040)	-.077 (-.487, .297)	-.204 (-.557, .194)
Concerned/Indifferent on Anger	-.258 (-.422, -.102)	0 (0,0)	-.258 (-.422, -.102)
Psy. Safety on Anger	0 (0,0)	-.610 (-.981,-.375)	-.610 (-.981,-.375)
Anger on Withdrawal	0 (0,0)	.494 (.142, .971)	.494 (.142, .971)
Psy. Safety on Sabotage	-.243 (-.511, -.094)	0	-.243 (-.511, -.094)
Psy. Safety on Turnover Intention	-.817 (-1.532, -.428)	0	-.817 (-1.532, -.428)
Concerned/Indifferent on Sabotage	-.103 (-.227, -.31)	.069 (-.222, .379)	-.034 (-.319, .221)
Concerned/Indifferent on Turnover	-.345 (-.729, -.123)	-.570 (-.988, -.148)	-.916 (-.1.381, -.527)
Anger on Sabotage	0	.399 (.067, .746)	.399 (.067, .746)
Anger on Turnover Intention	0	1.339 (.960, 2.891)	1.339 (.960, 2.891)

3.4.6.2 Model 2 with covariates

We also rerun our analyses, using gender and age as covariates. The structural model for Hypothesis 2 presented acceptable fit (χ^2 = 466.498; *df* = 189; GFI = .838; IFI = .902; TLI = .878; CFI = .900; RMSEA = 0.08). Gender influences sabotage behavior in employees (-.220*), and age influences withdrawal behavior (-.284***) and sabotage (-.165*). Therefore, this indicates that gender has a significant negative influence on sabotage behavior indicating that female employees are less likely to engage in sabotage compared to their male counterparts. Additionally, age has a significant negative effect on both withdrawal behavior and sabotage suggesting that as employees age, their engagement in these counterproductive work behaviors decreases. This implies that younger employees are more prone to engage in withdrawal and sabotage behaviors. Moreover, anger was found to have a significant positive effect on all forms of resistant behaviors, including sabotage, withdrawal, and turnover intentions.

Figure 3-5 Model 2 with Covariates

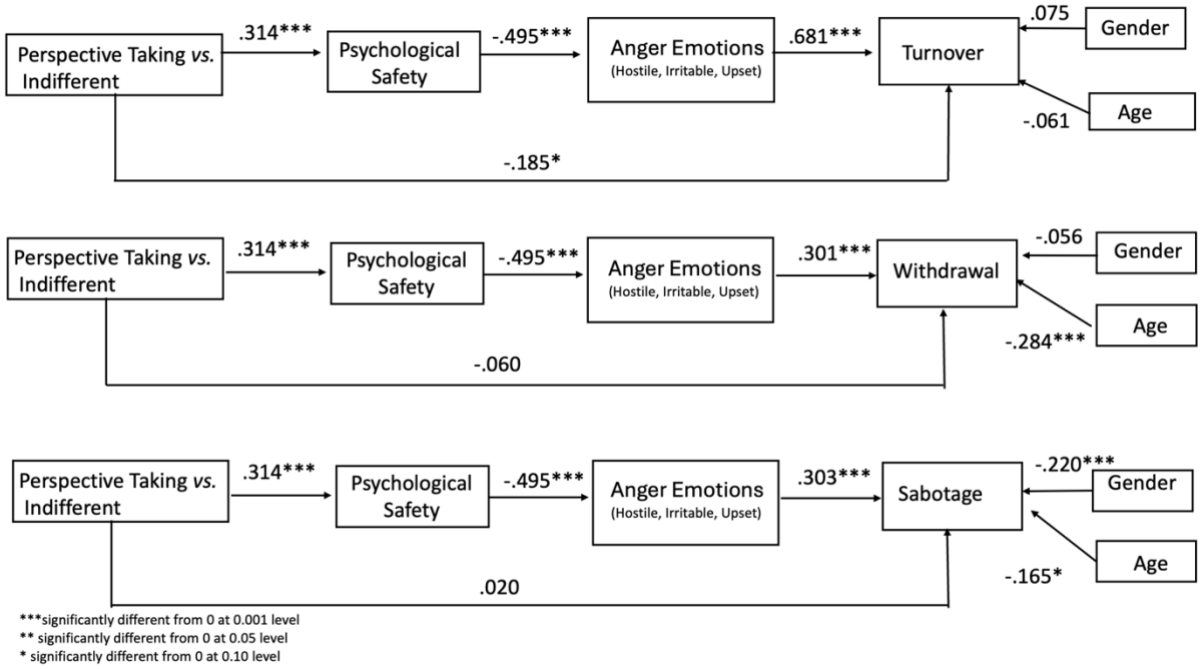


Table 3-7 Direct and Total Effects, in brackets, 95% confidence interval, shadowed non-significant

	Standardized indirect effects	Standardized direct effects	Standardized total effects
Psy. Safety on Withdrawal	-.298 (-.549, -.117)	0 (0,0)	-.298 (-.549, -.117)

Concerned/Indifferent on Withdrawal	-.126 (-.279, -.040)	-.161 (-.537, .206)	-.287 (-.641, .096)
Concerned/Indifferent on Anger	-.256 (-.423, -.107)	0 (0,0)	-.256 (-.423, -.107)
Psy. Safety on Anger	0 (0,0)	-.606 (-.974,-.384)	-.606 (-.974,-.384)
Anger on Withdrawal	0 (0,0)	.492 (.148, .903)	.492 (.148, .903)
Psy. Safety on Sabotage	-.240 (-.474, -.096)	0	-.240 (-.474, -.096)
Psy. Safety on Turnover Intention	-.818 (-1.514, -.463)	0	-.818 (-1.514, -.463)
Concerned/Indifferent on Sabotage	-.101 (-.218, -.036)	.044 (-.265, .314)	-.058 (-.334, .225)
Concerned/Indifferent on Turnover	-.346 (-.688, -.137)	-.605 (-.985, -.208)	-.951 (-1.390, -.552)
Anger on Sabotage	0	.396 (.112, .727)	. .396 (.112, .727)
Anger on Turnover Intention	0	1.350 (.979, 2.235)	. 1.350 (.979, 2.235)
Gender on Sabotage	0	-.474 (-.837, -.203)	-.474 (-.837, -.203)
Age on Sabotage	0	-.017 (-.032, -.003)	-.017 (-.032, -.003)
Gender on Turnover Intention	0	.376 (.050, .851)	.376 (.050, .851)
Age on Turnover Intention	0	-.010 (-.025, .003)	-.010 (-.025, .003)
Age on Withdrawal	0	-.036 (-.053, -.021)	-.036 (-.053, -.021)
Gender on Withdrawal	0	-.115 (-.488, .389)	-.115 (-.488, .389)

3.5 Discussion

Despite growing interest in interpersonal emotion regulation, the underlying mechanisms of how it may influence employees' outcomes are still under researched. In our study, we provided support for the mediating role of psychological safety within the IER

context and resistance scholarship. Our findings pinpoint the mechanism through which displayed perspective taking is related to lower levels of resistant behavior by supporting the serial mediation effect of psychological safety, fear and anger. Accordingly, this study showed that an increased sense of psychological safety decreases negative emotions in employees which in turn decreases resistant behavior. The study also showed that psychological safety does not offset all resistant behavior such as sabotage or withdrawal behavior.

The aim of this study is to expand the growing literature on interpersonal emotion regulation and its impacts on employees, by investigating the mechanisms explaining the effects of IER. In this context, it is important for organizations to better understand the role that psychological safety and emotions play regarding employees' behavior at the workplace. It can be suggested that employees who work with managers that display perspective taking experience an increase in psychological safety leading to a decrease resistant behavior. It is important to acknowledge that this study did not examine psychological danger as it is the antithesis of psychological safety (Lanke, 2023) although future research could potentially investigate psychological danger as a distinct construct.

For the *burdening pathway,* the study revealed that displayed perspective taking decreases turnover intentions through increased psychological safety and reduced fear in employees. Higher psychological safety leads employees to experience less fearful emotions such as being distressed or nervous, as employees feel more psychologically secure to stay at their current workplace. Accordingly, this effect was not just a correlation but a causal relationship, as psychological safety served as a buffer against stress and anxiety, attenuating passive resistance. This result also aligns with the findings of Zhou and Chen (2021) which demonstrated that high psychological safety leads to lower levels of emotional exhaustion. However, contrary to our hypothesis displayed perspective taking does not influence withdrawal behavior in employees, either directly or indirectly. A potential explanation can be found in the Conservation of Resources Theory (COR) (Hobfoll, 1989). The theory posits that individuals strive to acquire, maintain, and protect their resources, such as and energy (Hobfoll, 1989). Accordingly, when employees face excessive job demands and resource depletion before robotization, they may already experience emotional exhaustion and burnout prior to the robotization. As a result, displayed perspective-taking is unlikely to

alleviate this pre-existing mental state. Yet, it does curb intentions to leave the firm. The study in model 1b also revealed a significant negative relationship between age and withdrawal behavior, implying that as age increases withdrawal behavior decreases. These findings may concur with the findings of extent scholarship which concluded that older employees generally have lower absenteeism rates as they are more committed to their organizations (Farr and Ringseis, 2002) or may perceive lower opportunities at other organizations.

The results of the study on the *disempowering pathway* demonstrated a causal relationship in which a concerned manager directly decreases turnover intentions and sabotage behaviors through its effect on psychological safety. These counterproductive behaviors are therefore directly mediated by a decrease in anger indicating the importance of psychological safety in employees' responses. This also aligns with existing research which posits that employees feel safe to publicly express their opinions without any repercussions when experiencing high psychological safety (Kahn, 1990). As employees are allowed to vent their emotions, a fundamental self-regulatory strategy, they may reduce their negative emotions (Madrid, 2020) such as anger. In the Model 2 with the covariates, the findings suggest that gender influences sabotage behavior in employees. This may align with scholarship that found that females are less likely to engage in counterproductive work behavior (Ng et al., 2016). Further, the findings also show that age influences sabotage intentions, so that that older workers exhibit less counterproductive work behaviors. This is consistent with research that observed that older employees exhibit less hostility and anger than their younger colleagues (Ng and Feldman, 2008). Previous research has also suggested that older workers possess a greater capacity to regulate and manage their emotions in the workplace, which in turn reduces the likelihood of engaging in counterproductive work behaviors (Chapman and Hayslip, 2006; Ng and Feldman, 2008). In sum, psychological safety has a crucial mediator effect on various resistant behaviors. The results also show the importance of the co-variates gender and age, suggesting a potential moderating role.

In sum, this chapter examined the specific IER strategy of displayed perspective taking with a serial mediation pathway. The findings show that displayed perspective-taking by management is a crucial component in attenuating potential resistant behaviors through the mechanism of psychological safety. Accordingly, these results advance our knowledge on the

influence of IER displayed by managers at work. In particular, how psychological safety may establish a supportive environment that enhances leadership effectiveness and employee's acceptance of robotization initiatives. We now move onto the next chapter, which is the final chapter of the thesis, and it recaps the findings and contributions overall.

Chapter 4 CONCLUSION

While the preceding three chapters provided an in-depth discussion of the empirical studies, this chapter serves as the conclusion, synthesizing key findings and their broader implications. This thesis has systematically examined the research questions outlined at the beginning offering a comprehensive analysis of the factors motivating employee resistance to digital technologies and the managerial strategies employed to regulate emotions during robotization. In response to RQ1: *What perceptions motivate employees to resist digital technologies in the workplace?* the findings reveal that contrary to the dominant assumption of cognitive barriers, employees resisting digital technologies has a strong emotional basis. In response to RQ2: *What perceptions motivate employees to resist digital technologies in the workplace?*, this study identifies threat perceptions to various tangible and intangible resources as key drivers of resistance. These findings helped to identify four distinct pathways—*burdening, diminishing, disempowering, and isolating*—each explaining why resistance occurs.

Furthermore, in addressing RQ3(*What strategies are effective and are employed by management to regulate others' emotions during robotization?)* this thesis identifies targeted strategies that focus on the emotional aspects of resistance, aiming to regulate negative emotions in employees and attenuate resistance. Finally, in RQ4 (*How does displayed and communicated perspective taking by management decrease resistance?*) the role of perspective-taking is examined for its effectiveness in reducing resistant behaviors in employees. Accordingly, last chapter of the dissertation focuses on the theoretical and practical contribution of the thesis to scholarship. Subsequently, I turn my attention to practical and managerial implications of my findings. Finally, I also discuss future research and the limitations of this thesis.

4.1 Theoretical Contribution

The thesis contributes to the current scholarship in three ways. First, my research enriches the resistance scholarship by delving into the emotional bases of resistance thus complementing the existing cognitive based models of resistance. Earlier studies on change resistance primarily examine the cognitive aspects of those who resist (Huy et al., 2014) and attribute resistance to change to individual cognitive constraints such as inflexibility, limited

receptiveness to change, or aversion to risk (Piderit, 2000). Yet, this thesis shows that emotions play a crucial role in resistance and that they may lead to various resistant behavior at the workplace. Similarly, most research on resistance has focused on regular employees (Appelbaum et al., 2015; Oreg, 2006; Rahaman et al., 2020; Vasiliki et al., 2018), with limited attention given to examining resistance from managers' perspectives (Giangreco and Peccei, 2005) regarding blue collar workers in a manufacturing setting. Accordingly, my research and findings illustrate that emotions serve as a key driver in how employees perceive change and react to change and give the managers' perspective about change.

Second, I contribute to the resistance scholarship by presenting IER as a viable strategy to attenuate resistance. Although the significance of effective emotion regulation has been well established (Oreg and Michel, 2023), studies specifically examining the effects of interpersonal emotion regulation (IER) strategies in the workplace remain limited (Oreg and Michel, 2023). In particular, there has been little investigation into how managers' use of IER affects individual employee outcomes, despite growing interest in related constructs like emotional intelligence (Gooty et al., 2010). This gap is especially important in the context of resistant workplace behaviors, where most existing research has focused on employees' affective well-being (Thiel et al., 2015) or performance outcomes (Little et al., 2016; Vasquez et al., 2020). Given the organizational costs associated with resistance, it is critical to explore how managers' specific interpersonal behaviors, such as IER, can mitigate these challenges. To fill this void, my research examines the potential of managers' IER strategies to reduce resistant behaviors in the workplace. By focusing on displayed perspective taking—a key IER strategy—this research demonstrates how managers can shape employee outcomes by alleviating negative emotions such as fear, frustration, or anger. This study provides empirical evidence that regulating employees' emotions through perspective-taking can buffer against the psychological effects of resistance. As a result, my research and findings also enhance IER theory by extending this concept to the realm of organizations and work environments. By bridging IER theory with resistance management theory it offers a novel framework for understanding how emotional regulation by managers can be a practical tool for mitigating resistance during organizational transformations.

Third, this thesis contributes to the growing body of work on interpersonal emotion regulation (IER) (Madrid et al., 2016; Niven et al., 2009; Williams, 2007) and resistance scholarship by identifying psychological safety as a crucial mechanism in these processes. Chapter 2 uncovered the pivotal role of psychological safety, revealing that managers who cultivate a psychologically safe environment are more effective in executing IER strategies. In chapter 3 through a serial mediation model, the study shows that the impact of a manager's displayed perspective-taking on employee resistance is mediated by psychological safety. Specifically, psychological safety helps mitigate negative emotions such as fear or anger. When managers engage in visible perspective-taking, they enhance employees' sense of psychological safety, which, in turn, enables employees to address workplace issues that trigger emotional discomfort, as seen in scenarios like robotization (Little et al., 2016; Vasquez et al., 2020). Such management behavior fosters an environment where employees feel secure enough to express their concerns and opinions without fearing negative consequences. In such a setting, employees are more likely to feel supported by their leaders, who are open to addressing any challenges that arise (Detert and Burris, 2007). By positioning psychological safety as a mediator, this study extends the IER and resistance literature, offering new insights into how management can reinforce IER in employees during transformative situations. The identification of this mediation is significant because it not only adds to the understanding of psychological safety but also fills a notable gap in IER and resistance scholarship. This helps to provide a new understanding of how managers regulation strategies affect employee behavior by nurturing a psychological safety with employees.

We also introduced the concept of psychological danger, which focuses on a work environment characterized by inappropriate communication, a lack of inclusivity, and emotional immaturity that can potentially cause emotional or psychological harm, leading to dysregulation of emotions in individuals. Psychological danger, rather than being merely the absence of safety, encompasses not only interpersonal risks but also may result in emotional or professional harm, such as employee blame or bullying.

Moreover, IS research predominantly focuses on digital transformation from an organizational standpoint (e.g., its effect on innovation outcomes), yet earlier researchers have noted that the individual level remains understudied (Besson and Rowe, 2012; Braojos

et al., 2024). Accordingly, this thesis makes a direct contribution to IS literature by examining how managerial emotion regulation shapes employees' resistant behaviors toward robotization. By focusing on the managerial level, this study highlights the active role of leadership in IS in mitigating resistance and fostering smoother technology adoption within organizations. While scholars have emphasized that IS leadership primarily concentrates on cognitive approaches (Clausen et al., 2024; Rezazade Mehrizi et al., 2021), it is important to note that resistance is an emotional response. Consequently, effective IS leadership demands more than just cognitive abilities and requires strategies that encompass the emotional factor of employees.

Researchers have also noted that IS literature has mainly treated technology as a “black box” (Orlikowski and Iacono, 2001). In this context, the term "black box" describes the use of technology without examining its internal mechanisms. This approach also implies insufficient consideration of the intrinsic, dynamic interplay between technology and its potential impact on individual employees and thereafter on organizational outcomes (Gkinko and Elbanna, 2022). Here, my thesis directly addresses the issue by challenging the notion that these technologies should be treated merely as black boxes. Instead, it emphasizes the need to understand their real-world implications especially when it comes to the emotional responses in employees. By integrating IIT and emotion regulation theory into IS scholarship it advances the field by highlighting that technologies should not be seen as a black box. Instead, they should be understood and explored as an outgroup—a distinct category of non-humans that challenges workplace dynamics and compete for tangible and intangible resources with the employee (this is particularly evident through the distinct pathways).

Accordingly, this dissertation advances the theoretical discourse on the intersection of psychology, information technology and change-resistance management. By synthesizing diverse perspectives, it not only deepens the understanding of the complex interplay between technology adoption and employee behavior but also responds to calls for a more holistic approach to IS-driven change (Melville et al., 2004). The proposed framework offers a nuanced lens how IER strategies attenuate resistance in doing so, it contributes to both theory and practice, equipping scholars and practitioners with a comprehensive model to navigate digital transformation effectively.

My research also offers important insights for scholars in technology/IS management field by examining how managers' ability to regulate and support employees' emotional responses can shape technology acceptance, adaptation, and sustained use, particularly in organizations that are marked by rapid technological change or undergoing digital transformation efforts. Emotion regulation strategies such as transforming negative work environments and reframing emotions such as frustration into constructive attitudes, can lead to positive adaptation behaviors such as working effectively with the technology. This contribution is particularly valuable to technology management scholarship, as it addresses the need for deeper insights into non-cognitive factors that influence technology use, providing a complementary approach to traditional models based on cognitive acceptance.

4.2 Practical Contribution

A recent Forbes article highlights that novel technologies are increasingly met with resistance, as employees express frustration and skepticism in the workplace (Hamilton, 2025). This aligns with broader findings that indicate up to 70% of digital transformation efforts fail, largely due to employee resistance (Forrester, 2023; Morgan, 2019) Given these crucial challenges, my thesis directly responds to these reports by providing practical implications not only for organizations but also for managers navigating these transitions. By incorporating insights from psychology, information systems, and change management, this research offers actionable strategies to help leaders anticipate, understand, and mitigate employee pushback. The following sections will further elaborate on these strategies that help organizations and managers alike.

The emergent framework stresses the importance of the facets of resistance. Accordingly, this enriched understanding may help increase managerial and organizational awareness in the organization. Further, my empirical studies have shown that employees' motives are diverse, from protecting one’s identity to not wanting to give up their autonomy, as opposed to the dominant assumption of job vulnerability. Accordingly, the pathways proposed in the chapters can be used as a guide for specific interventions that organizations can use to address the potential resistance of employees to digital transformation. Many studies propose addressing resistance by investing in upskilling or reskilling (Jaiswal et al., 2022) or by training workers (Kraus et al., 2023). However, as the burdening pathway shows,

upskilling programs may not prevent resistance entirely unless they are able to mitigate the corresponding perceived stress. Training-based interventions should then help attenuate workers' perceived stress to diminish their resistance.

Chapter 2 and chapter 3 also focus on the importance of psychological safety within the organizational change context. In particular, the empirical findings from chapter 3 show the mediation pathway of psychological safety that attenuates resistance behavior in employees. Therefore, I suggest that nurturing a learning transformation in which the psychological safety of employees is guaranteed (Newman et al., 2017) can regulate the pathways. The reason behind this is because psychological safety in the workplace encourages employees to learn and upskill by fostering an environment where they feel safe to take risks, communicate openly, and embrace a culture of continuous learning. This safety net promotes innovation, creativity, and a supportive atmosphere, empowering employees to actively pursue skill development.

As elaborated in the chapters, the *diminishing* pathway focuses on threats to workers' performance. Therefore, here I suggest that managers employ the IER strategy of voicing, namely giving voice to the employees. For instance, managers can establish formal groups that enable various employees to exchange information to address problems with the implemented technologies (Birkel *et al.*, 2019; Chigbu and Nekhwevha, 2021). Within these groups, frustration can be vented, as employees can expose the deficiencies they observe and the corresponding implications for their performance. Moreover, these groups would help identify the obstacles to task pursuit, and in response, management could proactively create appropriate interventions or improvements to the technology or work environment to support the co-adaption process uncertainty (Nazareno and Schiff, 2021). This in turn would also help to co-regulate the emotions of managers themselves, thus increasing the emotional bond and stability between the two partners. I also suggest, to nurture a learning transformation in which the psychological safety of employees is guaranteed (Newman et al., 2017) can alleviate the burdening pathway as psychological safety in the workplace encourages employees to learn and upskill by fostering an environment where they feel safe to take risks, communicate openly, and embrace a culture of continuous learning. This safety net promotes innovation, creativity, and a supportive atmosphere, empowering employees to

actively pursue skill development. Further, this approach could acknowledge and adapt to various types of learning personalities (Afini Normadhi et al., 2019). This process could thus help nurture confident learners and make upskilling or reskilling less stressful for employees. Organisations could also include persona- based incentive strategies in which individuals playing a crucial role and contribution to the transformation are rewarded. For instance, every employee could become a change champion thereby also receiving bonus proportionate to helping colleagues cope with these new technologies. In this vein, core team members could also be rewarded visibly such as in newsletters or meetings.

The negative effects of increasing use of surveillance technologies, as reflected in the *disempowering* pathway, suggests the need for better corporate regulation of surveillance technologies that are perceived as respectful of employees and their privacy (Granulo et al., 2019; Malik et al., 2022; Schneider and Sting, 2020). Organisations could implement a framework that balances the power and control of these technologies to ensure transparency and enhance employee trust. Moreover, as also shown in the *disempowering pathway,* gamification can restore the power balance between the machine and the individual. One way that could make the implementation process less scary is to adopt gamified approaches (Kumar and Raghavendran, 2015). Given the positive effects of gamified learning at the workplace as elaborated in Chapter 2 employees can familiarize themselves with the technology in a playful way, thus mitigating the perceived fear and stress, enhancing their confidence and well-being, and increasing their commitment during the transition process (Kumar and Raghavendran, 2015). Literature has even shown that gamification positively impacts employee's perception towards organizational change (Jacob et al., 2023). Further, given the positive effects of gamified learning at the workplace, employees can familiarize themselves with the technology in a playful way, thus mitigating the perceived burden and stress, enhancing their confidence and well-being, and increasing their commitment during the transition process (Kumar and Raghavendran, 2015). This suggestion also has direct implications for IS scholarship, specifically in promoting the incorporation of enjoyment-related emotions like excitement or playfulness into workplace technology. Conventional IS approaches typically concentrate solely on a technology's system functionality (Hibbeln et al., 2017). However, studies have demonstrated that digital systems influence user emotions (Gkinko and Elbanna, 2022; Hibbeln et al., 2017). By transitioning from a purely functional

approach to an 'emotion focus' IS design, organizations can develop more user-friendly technologies. This shift may reduce employee resistance to new systems and ultimately lead to increased job satisfaction.

Even though, the pathway of *isolation* has not been examined in chapter 2 and 3, I still suggest that organizations should seek to address the problem of isolation. Management could create social networks and opportunities for socialization in the workplace (Ding, 2021; Lammi, 2021). For example, management may implement mentoring programs to connect employees who are proficient at using these technologies with those who most need help. These networks could convey valuable information, while simultaneously enabling formal support and personalized training for employees in need. Furthermore, these networks could also include less formal socialization activities that could facilitate group cohesion and increase intergroup relations in the workplace.

This thesis also uncovers valuable findings that are relevant to scholars and practitioners in IS, human resource management (HRM), and change management. Recent studies in Information Systems (IS) have recognized the significance of emotions during interactions with technology. For instance, Hibbeln et al. (2017) show that negative emotions can considerably affect user behavior. Consequently, a practical application of this thesis is to create policies and systems that consider the emotional aspects of employees, thus improving user experience. This approach also suggests that technologies should not be viewed as passive tools but rather as non-human entities. Accordingly, IS and Human Resource Management (HRM) research should adopt a more comprehensive perspective on employees, moving beyond the notion of passive technology use and incorporating psychological and emotional factors into implementation strategies. By examining the role of emotion regulation, this study provides IS and HRM professionals with insights into how emotions shape employee behavior, motivation, and resistance to change within organizations. By offering a nuanced understanding of emotions, my research helps create supportive environments that optimize employee engagement and performance. Additionally, it encourages leaders to recognize and manage emotional dynamics within teams, providing a roadmap for integrating emotional awareness into HR policies that promote employee well-being and resilience.

Emotion regulation is highlighted as a foundational component for HR practices aimed at fostering a resilient and adaptable workforce, which is essential for successful organizational transformation. By focusing on the emotional dynamics within the workplace, my research helps organizations develop workforces that are not only technically skilled but also emotionally resilient and strategically aligned with organizational goals. This perspective provides HRM scholars and practitioners with a framework for designing HR strategies that enhance both individual and organizational performance over the long term.

Moreover, emotion regulation skills are crucial for building a culture of resilience and adaptability as organizations navigate ongoing change and disruption. To support this, HR practitioners should consider developing training programs that equip managers with the skills to recognize and understand employees' emotions. Such programs can also foster openness to employee "voice"—the expression of feedback, concerns, and ideas—which is essential for a motivated and aligned workforce. By supporting managers in these areas, HRM can cultivate a workplace culture that values emotional intelligence, enhances employee engagement, and contributes to sustained organizational success.

Ultimately, my thesis aims to equip these scholars and practitioners with actionable insights into how emotion regulation can be embedded within training and support programs to improve technology adoption and user satisfaction. By promoting adaptive emotion regulation strategies, organizations can enhance employees' resilience to technology-related stressors, foster a more engaged user base, and better align technological systems with user goals. This research thus bridges a critical gap by emphasizing emotions and emotion regulation as essential components for successful technology integration in modern workplaces. By supporting managers in recognizing and managing user emotions, my research encourages the development of emotionally aware policies and training programs that address the psychological needs of employees, fostering a more adaptive and responsive technological environment. Emotion regulation emerges as a critical tool for technology management professionals, serving not only to mitigate user resistance but also to foster a culture of openness and collaboration around technology initiatives. By prioritizing emotion regulation, organizations can enhance system usability, user satisfaction, and overall implementation success. This focus on the "human side" of digital transformation

underscores that while innovative technologies are designed to increase efficiency and productivity, their full potential cannot be realized without addressing the emotional and psychological needs of the people using them. Technology alone is not sufficient; without human adaptability, capability and engagement, technological tools are unlikely to achieve optimal productivity and effectiveness.

4.3 Limitations

This thesis has several limitations which now will be discussed. Firstly, a potential drawback of the qualitative study is that it involves only two cases with limited duration at both companies. Since I was only there present for a brief period of time, my observations and insights are restricted. Consequently, I was unable to gain a thorough comprehension of all the strategies employed by the company. Using more cases and including more companies could enhance the validity of my findings. Similarly, longitudinal studies could enrich the knowledge of how IER strategies may decrease resistance over time. The majority of the examined studies are cross-sectional, which prevents us from examining how resistance evolves and changes over time and whether and how these changes are modulated by emotion management. Similar, another main limitation of my study is the small sample size, which reduces the ability to generalize the findings.

Another limitation of my thesis is that its focus is on a specific organizational context, in this case in chapter 2 on two manufacturing companies in Spain. Thus, it can be assumed that this limits the generalization of my results to other organizational companies or settings. It could be assumed that managers in non-manufacturing companies employ other IER strategies, therefore a potential avenue could be investigating IER strategies in other industries such as retail or education. Future research should aim to gather data from diverse cultures and countries in order to guarantee the validity of findings determine if cultural backgrounds may also play a mediating role in resistance similar to psychological safety. Similarly, study 2 was limited to the United States. Therefore, I was not able to ensure validity across different cultures. Also, considering that the sample size was small is another limitation thus also decreasing the generalizations of the findings.

4.4 Future Research Lines

This thesis first started on introducing the specific pathways of resistance that depict why resistance occur. Yet it should be noted that these pathways are intended to represent analytical abstractions, provide a comprehensive but parsimonious explanation of resistance as a process. Accordingly, future research should explore the individual, organizational and contextual factors that modulate the prevalence of each pathway, including the characteristics of the specific technology in question, should be examined. Further, it should also focus on identifying and testing the boundary conditions that can explain when, where and for whom each path is more likely to occur. This empirical confirmation could extend the technologies under examination and consider the different types of employees, studying whether the proposed pathways can also explain the resistance of managers, entrepreneurs, or freelance workers.

Our analysis of the mechanisms linking perceived threats, emotions, and resistance-related actions shows that more work is necessary to test the pathways. A discussion of such links is not found in intergroup-threat theory which primarily centres on cognitive processes emphasizing how individuals perceive material or intangible threats. Moreover, although this thesis acknowledges that appraisals of threat activate negative emotions, its ultimate focus is to explain how threat perceptions impact attitudes or stereotypes toward outgroups, not explicitly diving into the mechanisms linking perceptions and emotional reactions of individuals and the outcomes it may lead to. More work is also necessary to integrate emotional dimensions into the existing theory of employee resistance to digital technologies. To illustrate, previous work has failed to examine the emotional complexity— the "simultaneous or sequential experience of at least two different emotional states during the same emotional episode" (Rothman and Melwani, 2017, p. 260)—that is typically experienced when individuals make sense of complex events, such as the introduction of these technologies. It is unclear whether and how the different emotions combine to either promote or impede resistance. Work on consumer innovation adoption (Valor et al., 2022) shows that hope can neutralize the paralyzing and withdrawing action tendencies associated with anxiety; in contrast, some emotions (e.g., guilt) may override others (e.g., curiosity), consistent with a hierarchical ordering of emotions. An examination of such combinations of

emotions can expand our understanding of the links between emotions and resistance-related actions.

Additionally, our understanding of the individual, organizational, and social consequences of each pathway remains incomplete. It is unclear whether each of the pathways differentially impacts employee well-being, performance, organizational commitment. Since research indicates that resistance spills over into employees' private lives, future research could expand our understanding of these consequences and examine other repercussions at home, such as how resistance affects child development and children's career choices.

Longitudinal studies could also enrich our knowledge of how resistance occurs and how it might be mitigated by IER strategies. The majority of the examined studies are cross-sectional, which prevents an examination of how resistance evolves and changes over time and whether and how these changes are modulated by organisational actions and contextual events. Moreover, cross-sectional studies do not adequately capture or describe the dynamic interactions that usually occur among various manifestations of resistance from the introduction of such technologies to the relatively more stable and steady states of implementation and habituation. Increasing experience with technologies may alter the perceived threat, thus causing the manifestations, strength, and levels of resistance to change accordingly over time (Isabella, 1990).

Similarly, different resistance actions may shape the future pathways of resistance. To illustrate, emotional venting may help decrease negative emotions (Nils and Rimé, 2012); employees who express discontent may then be more likely to appease their negative affective experiences and progressively attenuate their resistance-related actions. Finally, organisations treat workers' resistance differently; identifying the relationships between organisational strategies and resistance pathways can also expand our processual understanding of resistance. A processual approach would also help reveal the mechanisms underlying the process by which individuals' perceptions and, especially, emotions crystallize in the form of group cognitions and emotions (or fail to do so). Examining group-level emotions is fundamental, as group-based emotions support collective actions (Niedenthal and

Brauer, 2012). A focus on emotional contagion (Barsade, 2002; Barsade and Gibson, 1998; Niedenthal and Brauer, 2012), emotional sharing or collective rumination (Piening et al., 2020) could help us understand the formation of emotional climates and their influence on resistance. Additionally, examining individual and group processes of emotional regulation (Hochschild, 1979) may contribute to such a processual understanding of employee resistance.

As shown, in this thesis studies its focus is only on the individual perspective overlooking the collective dimension to resistance. Accordingly, one potential area for future research is to explore the connection between individual efforts and the development of collective resistance. This study could investigate the relationship between individual acts of resistance and how these can lead to a collective interplay that ultimately evolves into a larger movement of collective resistance. Another rich area of inquiry would be to study the mechanisms of collective action such as in the case of the food delivery drivers (Bonini and Treré, 2024; Grohman, 2021; Newlands, 2021; Qadri and D'Ignazio, 2022). Here the focus could be how the specific strategies and tactics may be applied in other contexts. The "everyday" or 'decaf' resistance tactics such as subverting the algorithms could also be another factor in studying how the individual acts mobilize collective resistance behaviors and lead to digital activism. The potential for digital activism to support collective resistance could thus be explored in future research, focusing on the dynamic relationship between worker resistance and the ways in which digital platforms facilitate the coordination of collective actions. For instance, studies could examine specific tactics or hashtags that are used to mobilize collective behavior or organize boycotts. Additionally, the effectiveness of various digital strategies, such as campaigns or virtual unions, could be assessed and how they empower workers' voices in collective resistance. Moreover, the study of these digital platforms and their role in fostering solidarity among dispersed freelance workers (Bonini and Treré, 2024; Grohman, 2021; Newlands, 2021) could also contribute to understanding how these groups facilitate a shared identity and lead to collective resistance efforts against exploitation. Future research should aim to gather data from diverse cultures and countries in order to guarantee the validity of findings determine if cultural backgrounds may also play a mediating role in resistance similar to psychological safety.

While one focus of this thesis was on the mediating role of psychological safety future research should consider other mediators that could influence employees. For instance, could organizational justice perceptions of employees also be effective in mitigating resistance in employees? Also, all data of the thesis was only collected at one point of time. Thus, it is recommended to conduct longitudinal studies to better understand how interpersonal emotion regulation impacts resistance in employees over time. Future research should also focus on other IER strategies and examine how they might decrease rejection in individuals, for instance through the use of ethnography. This thesis also used various emotions grouped together based on the specific pathway, therefore another possible future research avenue concerns the regulation of specific emotions (Niven et al., 2016). An important question therefore will be to determine how a specific IER strategy aims to decrease or increase a particular emotion in other individuals.

Additionally, future studies could examine whether resistance may also be productive, leading to positive outcomes. To illustrate this point, in company A emotional venting and voicing may have led to a decrease in resistance. As such, future research could focus on the voicing behavior and how it could ultimately improve the performance of employees and the organisation overall. This is consistent with work showing that anger mobilizes energy in individuals and thus leads to similar levels of creativity as happiness (Baas et al., 2011; Miron-Spektor et al., 2011). Indeed, some studies show that employees respond to technology-induced threats through adaptive and creative forms of resistance. For example, some employees facing job threats invest in self-development, engaging in upskilling or reskilling activities outside of the workplace (Jacob et al., 2023; Li, 2023; Mayer and Velkova, 2023; Mosseri et al., 2023). This work suggests that emotions like anger, fear, or irritation may fuel creativity and/or spur actions different from withdrawal or attack. Understanding when employees utilize technology as a catalyst to create new professional identities or enhance their expertise would provide a more balanced view of workers' responses to the perceived threats.

Another interesting research avenue would be to compare the managers' different IER strategies among employees. Here, various IER strategies could be compared in order to see which one is the most effective in stalling resistance. Ultimately, future research should also

look deeper into examining group-level emotions, given that management in company B mentioned the phenomenon of emotional contagion. Thus, a focus on emotional contagion (Barsade, 2002; Barsade and Gibson, 1998; Niedenthal and Brauer, 2012), emotional sharing or collective rumination (Piening et al., 2020) could help us understand the formation of emotional climates and how they may be modulated by IER strategies. Finally, examining individual and group processes of emotional regulation (Hochschild, 1979) may contribute to such a processual understanding of employee resistance.

In sum, my thesis serves as a guiding point in understanding the motives for resistance in employees and expands the IER construct to the workplace and organizational behavior domain. Further, my study also addresses the gap in resistance theory (Oreg and Michel, 2023) by exploring how manager's IER strategy could potentially attenuate resistant behavior in employees. Ultimately, my study also contributes to the IER literature by identifying the mediation path of psychological safety between a specific IER strategy employed by management and individual counterproductive work behavior. I hope that my study will be helpful to support managers in building effective strategies that combat resistance with a focus on regulation emotions in individuals. I also hope that my thesis serves as a departure point to generate more research and discussion into how managers' IER strategies may increase the health and well-being of employees in the workplace. There is no doubt that a more nuanced understanding of emotion regulation in the workplace can significantly benefit both organizations and employees, making the work environment more positive for everyone involved.

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APPENDIXES

Appendix a: Semi-structured Interview Guide

Dear _____

Are you currently undergoing a digital transformation / or have you recently led a digital transformation change in the company?

I am a student pursuing a Ph.D. in Management at ICADE. I am requesting your participation based on your background. I am looking for your experience to add to the knowledge required to address the digital transformation process for employees. This study consists of a semi-structured interview. I will provide you with a consent form before participation. All responses and all information will be kept confidential. Your participation is very important to the success of this study; however, you may withdraw from the study at any time for any reason should you no longer want to be a part of the study. With your participation, this study is possible.

I look forward to interviewing you. Thank you.

Questions for the managers:

- Please introduce yourself and describe your position.
- Can you tell us a bit about SG values and mission? Give us a glimpse into the culture of the firm.
- Please describe your experience with the digital transformation process (questions: when was it implemented?)
- What did they do exactly? How did it affect operations, in which way were old routines changed? Why was it done?
- Did it create any risks for employees?
- Were employees skilled for this change?
- How was it communicated to the employees? Who communicated?
- What was the position of the trade union/comité de empresa?
- What were the employees' reactions, notably factory or plant workers? Did you observe negative or positive reactions? How did negativity manifest?
- Please describe your experience relative to employee resistance within digitalization implementations. Were there any conflicts arising from the implementation?
- Why would you think are employees afraid of that causes resistance to digital transformation/working with novel technologies such as cobots implementation?
- How did you make sense of this resistance?
- How did the resistance manifest?
- Were there differences among employees?

- What is in your opinion the main causes of employee fear and resistance relative to implementing new technologies? And of acceptance?
- What specific strategies did you leverage to overcome the resistance?
- Tell me about a situation where you successfully overcame significant individual resistance to change when implementing new technologies.
- What has changed in the worker's life after the implementation?
- What is the situation now?
- How do you feel about this implementation? Would you do something about it differently? If yes, what?
- How do you plan to tackle the second phase of robotization?
- Anything else regarding overcoming resistance to change, during DT that you would like to include?

Appendix b: Photos

Photo 1 Collaborative Robot

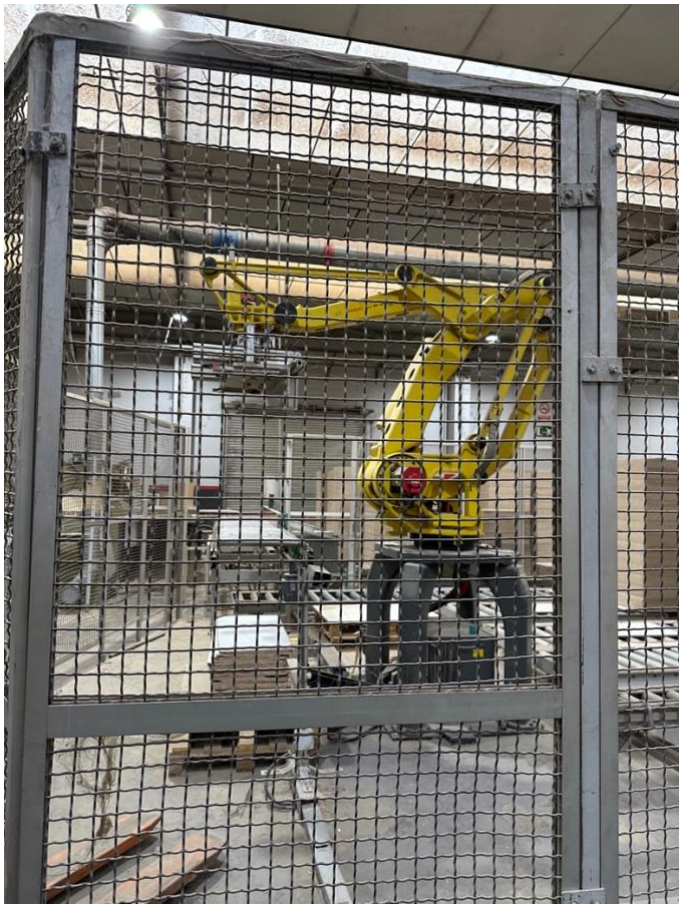
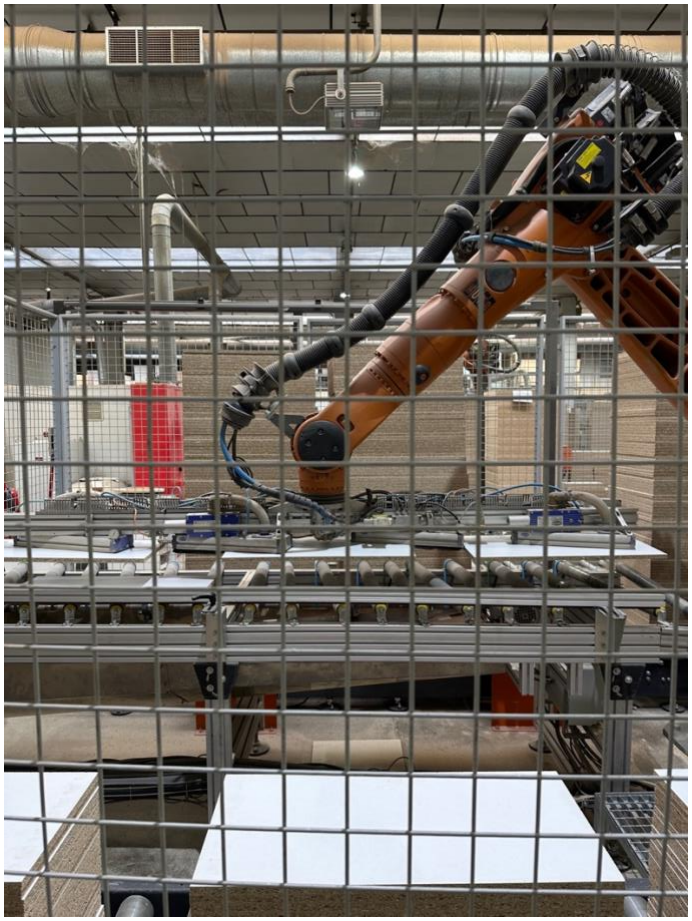


Photo 2. Automated guided vehicle that transports materials or products between areas

Photo 4. Robot



Appendix c: Qualtrics survey questionnaire

Introduction and Purpose

You are invited to participate in a research study being conducted by a team of researchers including Veronika Cieslak (University of Comillas, Spain), Helena González-Gómez (NEOMA-BS, France), and Carmen Valor (University of Comillas, Spain). The purpose of this study is to examine people's perceptions of managerial decisions. This page explains what you will do if you decide to participate in this study. Please read it carefully before you make a decision about participating.

Description of the Study Procedures

Your participation in this study will last approximately 7 minutes. During the study, you will use your tablet or laptop to read a scenario, do a task, and finally you will be asked some additional questions about the scenario, yourself and other demographics.

While this form provides a basic description of the types of tasks you will participate in, we

cannot explain the study in detail at this point because it may affect your responses.

Risk of Participation

There are no known risks associated with participating in this research.

Benefits of Participation

Participation in this study will be compensated according to Prolific standards. Otherwise, taking part in this study is not likely to benefit you personally. However, this research may help us understand best managerial practices at work.

Costs

There will be no costs to you for participating in this study.

Payments

You will receive compensation according to Prolific standards for participation in this research project.

Confidentiality of Records

All information gathered will remain confidential. Your responses will only be identified by a participant number, which will not be linked to your identity. The results of the study may be published or presented at meetings, but your identity will not be revealed. We will work to make sure that no one sees your survey responses without approval.

Contacts and Questions

For more information concerning this research, or if you believe you may have suffered a research related injury, you should contact Veronika Cieslak at vcieslak@comillas.edu.

Participant Rights

You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled.

If you choose to participate in the study, you may discontinue participation at any time. By continuing to the survey, you do not give up any personal legal rights you may have as a participant in this study.

An Ethics Committee responsible for human subjects research at NEOMA Business School, France reviewed this research project and found it to be acceptable, according to applicable state regulations and school policies designed to protect the rights and welfare of participants in research.

Consent

By clicking the button below to begin the study, you indicate that you have read the contents of this consent form. Note that even if you consent to participate, you may withdraw at any time. Please select one of the statements below.

- ○ I consent to participate in this study (1)
- ○ I DO NOT consent to participate in this study (5)

Skip To: End of Block If Consent Form Introduction and Purpose You are invited to participate in a research study being... = I DO NOT consent to participate in this study

Page Break

X→ X→

exampleattch1 In these studies, there will be a series of questionnaires. **It is important that you pay attention to all the questions**, otherwise we cannot interpret your answers and you might be disqualified. To make sure that you read the instructions, please select the word "Every day". Don't select any other word, and ignore the question at the end of this paragraph. Thank you very much for your cooperation.

How often do you go abroad?

- ○ Never (1)
- ○ Rarely (2)
- ○ About twice per year (3)
- ○ Every month (4)
- ○ Every day (5)

Page Break

exampleattch2 **Are you sure about your previous answer?**

In these studies, there will be a series of questionnaires. **It is important that you pay attention to all the questions**, otherwise we cannot interpret your answers and you might be disqualified. To make sure that you read the instructions, please select the word "Every day". Don't select any other word, and ignore the question at the end of this paragraph. Thank you very much for your cooperation.

How often do you go abroad?

- ○ Never (11)
- ○ Rarely (12)
- ○ About twice per year (13)
- ○ Every month (14)
- ○ Every day (15)

Page Break

prolificid Thank you very much for participating in this study that will take approximately 7 minutes to complete. Please type below your Prolific ID.

_____

Page Break

End of Block: Consent

Start of Block: compassionate

intro1com You are working in a manufacturing company that assembles airplane parts for the aviation industry. You have just been called to a meeting with your production-plant manager that leads the factory you work at.

After a brief introduction, your manager announced that: ***"Starting from next month on, the company will introduce robotics in the factory."***

Your manager explained that the reasons to introduce this robot are based on helping the company be more competitive, cutting costs, and increase value for customers.

Page Break

intro2com Your manager further told you that: "***We are well aware of the hard work you do every day, with many hours in the factory, dealing with physical and mental strain, I can imagine how tiring this might be.***"

Your manager further told you: *"If I put myself in your shoes, I see why you might feel threatened…and I understand that you may **feel anxious and worried** about this robot, but I can assure you that **you will not be displaced or suffer from this change**. On the contrary, our hope is that you have better working conditions."*

---

intro3com After presenting the implementation plan, the meeting was over and everyone went back to work.

End of Block: compassionate

Start of Block: indifferent

intro1ind You are working in a manufacturing company that assembles airplane parts for the aviation industry. You have just been called to a meeting with your production-plant manager that leads the factory you work at.

After a brief introduction, your manager announced that: ***"Starting from next month on, the company will introduce robotics in the factory."***

Your manager explained that the reasons to introduce this robot are based on helping the company be more competitive, cutting costs, and increase value for customers.

Page Break

intro2ind Your manager further told you that: ***"We are well aware that you are all used to work in your own way; in the end, it's just repetitive work, nothing more."***

Your manager further told you: *"I can tell you that **this project was approved by the director**, according to the company vision. **This is all you need to know**. In fact, the company's goal is that this robot will allow you to produce more in less time."*

---

intro3ind After presenting the implementation plan, the meeting was over and everyone went back to work.

End of Block: indifferent

Start of Block: Task

attchk1 Please select the option that describes best what the scenario you read in the previous screens was about:

- ○ A manager who presents a new robotics implementation in a company (1)
- ○ A manager who describes the sales plan for the next months (2)
- ○ A manager who announces the change of the company director (3)

Page Break

email Please, imagine how the employee feels about the organizational change. Try to put yourself in the position of the employee and feel the full impact of this change on the employee.

Now respond to these questions.
Please imagine that Pat, one of your closest colleagues was not able to attend the meeting. Write an email to Pat with your impressions about the meeting:

_____

_____

_____

_____

_____

Page Break

Emo-Keywords Please write down three keywords that describe what you *feel* about this change, based on the scenario presented:

- ○ Keyword 1 (4) _____
- ○ Keyword 2 (5) _____
- ○ Keyword 3 (6) _____

End of Block: Task

Start of Block: DVs-Emotions and manager

Anxiety
Thinking of the scenario you read in the previous screens, to what extent do you feel:

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
Nervous (nervous)	○	○	○	○	○	○	○
Anxious (anxious)	○	○	○	○	○	○	○
Worried (worried)	○	○	○	○	○	○	○
Apprehensive (apprehen)	○	○	○	○	○	○	○

Page Break

PANAS

Thinking of the scenario you read in the previous screens, to what extent do you feel:

	Very slightly or not at all (1)	A little (2)	Moderately (3)	Quite a bit (4)	Extremely (5)
Interested (PANAS1po)	○	○	○	○	○
Distressed (PANAS2ne)	○	○	○	○	○
Excited (PANAS3po)	○	○	○	○	○
Upset (PANAS4ne)	○	○	○	○	○
Strong (PANAS5po)	○	○	○	○	○
Guilty (PANAS6ne)	○	○	○	○	○
Scared (PANAS7ne)	○	○	○	○	○
Hostile (PANAS8ne)	○	○	○	○	○
Enthusiastic (PANAS9po)	○	○	○	○	○
Proud (PANAS10po)	○	○	○	○	○
Irritable (PANAS11ne)	○	○	○	○	○
Alert (PANAS12po)	○	○	○	○	○
Ashamed (PANAS13ne)	○	○	○	○	○
Inspired (PANAS14po)	○	○	○	○	○
Nervous (PANAS15ne)	○	○	○	○	○
Determined (PANAS16po)	○	○	○	○	○

Attentive (PANAS17po)	○	○	○	○	○
Jittery (PANAS18ne)	○	○	○	○	○
Active (PANAS19po)	○	○	○	○	○
Afraid (PANAS20ne)	○	○	○	○	○
Hopeful (PANAS21po)	○	○	○	○	○

Page Break

psycsaf **Thinking again about the scenario your read**, please rate your agreement with the following:

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
If I make a mistake in this job, it is often held against me. (psysaf1r)	○	○	○	○	○	○	○
It is difficult to ask others in this department for help. (psysaf2r)	○	○	○	○	○	○	○
My manager often encourages me to take on new tasks or to learn how to do things I have never done before. (psysaf3)	○	○	○	○	○	○	○
If I was thinking about leaving this company to pursue a better job elsewhere, I would talk to my manager about it. (psysaf4)	○	○	○	○	○	○	○

If I had a problem in this company I could depend on my manager to be my advocate. (psysaf5)	○	○	○	○	○	○	○
Often when I raise a problem with my manager, she/he does not seem very interested in helping me find a solution (psysaf6r)	○	○	○	○	○	○	○

Page Break

humanness_4 **Thinking again about your manager in the scenario your read**, please rate your agreement with the following:

	1. Does not apply to my manager at all (1)	2. (2)	3. (3)	4. Does apply to my manager moderately well (4)	5. (5)	6. (6)	7. Does apply to my manager extremely well (7)
Competent (comp1)	○	○	○	○	○	○	○
Intelligent (comp2)	○	○	○	○	○	○	○
Capable (comp3)	○	○	○	○	○	○	○
Skillful (comp4)	○	○	○	○	○	○	○
Kind (warm1)	○	○	○	○	○	○	○
Friendly (warm2)	○	○	○	○	○	○	○
Warm (warm3)	○	○	○	○	○	○	○
Helpful (warm4)	○	○	○	○	○	○	○
Sincere (moral1)	○	○	○	○	○	○	○
Trustworthy (moral2)	○	○	○	○	○	○	○
Respectful (moral3)	○	○	○	○	○	○	○
Honest (moral4)	○	○	○	○	○	○	○

Page Break

empathy
Please rate the extent to which you think on average each of the following statements applies to your manager in the scenario:

"My manager..."

	1. Does not apply to my manager at all (1)	2. (2)	3. (3)	4. Does apply to my manager moderately well (4)	5. (5)	6. (6)	7. Does apply to my manager extremely well (7)
Gives me praise for my good work (empath1)	○	○	○	○	○	○	○
Shows me encouragement for my work efforts (empath2)	○	○	○	○	○	○	○
Shows concern about my job satisfaction (empath3)	○	○	○	○	○	○	○
Expresses his/her support for my professional development (empath4)	○	○	○	○	○	○	○
We just want you to mark number two (attch2)	○	○	○	○	○	○	○

Page Break

Trust
Please rate the extent to which you think on average each of the following statements applies to your manager in the scenario:

	1. Does not apply to my manager at all (1)	2. (2)	3. (3)	4. Does apply to my manager moderately well (4)	5. (5)	6. (6)	7. Does apply to my manager extremely well (7)
I am usually given an honest explanation for decisions. (Trust1)	○	○	○	○	○	○	○
My views are considered when decisions are made. (Trust2)	○	○	○	○	○	○	○
My needs are taken into account when decisions are made. (Trust3)	○	○	○	○	○	○	○
My manager tries hard to be fair to their employees. (Trust4)	○	○	○	○	○	○	○
My manager gives me an honest explanation for decisions. (Trust5)	○	○	○	○	○	○	○

My manager considers my views when decisions are made. (Trust6)	○	○	○	○	○	○	○
My manager takes account of my needs. (Trust _55)	○	○	○	○	○	○	○

End of Block: DVs-Emotions and manager

Start of Block: DVs-Behavior

RTC **Thinking again about your manager's decision in the scenario your read**, please rate your agreement with the following:

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I am afraid of this decision. (ChAff1)	○	○	○	○	○	○	○
I have a bad feeling about this decision. (ChAff2)	○	○	○	○	○	○	○
I am quite excited about this decision (ChAff3R)	○	○	○	○	○	○	○
This decision is making me upset (ChAff4)	○	○	○	○	○	○	○
I am stressed by this decision (ChAff5)	○	○	○	○	○	○	○
I will look for ways to prevent this decision from being implemented (ChBe1)	○	○	○	○	○	○	○
I will protest against this decision (ChBe2)	○	○	○	○	○	○	○
I will complain about this decision to my colleagues (ChBe3)	○	○	○	○	○	○	○

I will present my objections regarding this decision to management (ChBe4)	○	○	○	○	○	○	○
I will speak rather highly of this decision to others (ChBe5R)	○	○	○	○	○	○	○
I believe that this decision will harm the way things are done in the organization (ChCog1)	○	○	○	○	○	○	○
I think that it's a negative thing that we are going through this decision (ChCog2)	○	○	○	○	○	○	○
I believe that this decision will make my job harder (ChCog3)	○	○	○	○	○	○	○
I believe that this decision will benefit the organization (ChCog4R)	○	○	○	○	○	○	○
I believe that I can personally benefit from this decision (ChCog5R)	○	○	○	○	○	○	○

Page Break

X→ X→

CWB

Thinking about the scenario you read, and putting yourself in the position of the employee, how likely you are to:

	Extremely unlikely (1)	Moderately unlikely (2)	Slightly unlikely (3)	Neither likely nor unlikely (4)	Slightly likely (5)	Moderately likely (6)	Extremely likely (7)
Purposely waste your employer's materials/supplies. (Sabotag1)	○	○	○	○	○	○	○
Purposely damage a piece of robot equipment or any other property. (Sabotag2)	○	○	○	○	○	○	○
Purposely dirty or litter your place of work. (Sabotag3)	○	○	○	○	○	○	○
Come to work late without permission. (Withdr1)	○	○	○	○	○	○	○
Stay home from work and say you are sick but are not. (Withdr2)	○	○	○	○	○	○	○
Take a longer break than you are allowed to take. (Withdr3)	○	○	○	○	○	○	○
Leave work earlier than you are allowed to. (Withdr4)	○	○	○	○	○	○	○
Please mark extremely likely. (atten3)	○	○	○	○	○	○	○

Page Break

Turnover

Following the scenario, you read and putting yourself in the position of the employee, how likely you are to do the following:

	Extremely unlikely (1)	Moderately unlikely (2)	Slightly unlikely (3)	Neither likely nor unlikely (4)	Slightly likely (5)	Moderately likely (6)	Extremely likely (7)
I often think of leaving the organization. (turnov1)	○	○	○	○	○	○	○
It is very possible that I will look for a new job next year. (turnov2)	○	○	○	○	○	○	○
If I may choose again, I will choose to work for another organization. (turnov3)	○	○	○	○	○	○	○
If you are reading please mark slightly unlikely. (Turnover_28)	○	○	○	○	○	○	○

Page Break

End of Block: DVs-Behavior

Start of Block: ManCheck

mckcompas

Thinking about your manager's announcement in the scenario you read, please answer the following questions:

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
My manager was aware of the hard work I do (mchcom1)	○	○	○	○	○	○	○
My manager acknowledged and identified emotions that I may feel following the announced decision (mchcom2)	○	○	○	○	○	○	○
My manager discussed the challenging nature of my work (mchcom3)	○	○	○	○	○	○	○
My manager explained clearly that the robotization will make tasks easier for me (mchcom4)	○	○	○	○	○	○	○

mckindf

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
My manager ignored and dismissed the hard work that I do (mchind1)	○	○	○	○	○	○	○
My manager clearly prioritized company's goals over my own wellbeing (mchind2)	○	○	○	○	○	○	○
My manager seemed unconcerned about what I might feel following the announced decision (mchind3)	○	○	○	○	○	○	○
My manager lacked empathetic feelings and seemed indifferent towards me (mchind4)	○	○	○	○	○	○	○

End of Block: ManCheck

Start of Block: Controls

big5

FINAL PART. To finish, please answer a few questions about yourself and your current job.

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please select the number next to each statement that indicates the extent to which you agree or disagree with that statement.

"I see myself as someone who...

	1=Strongly Disagree (1)	2 (2)	3=Neither Agree nor Disagree (3)	4 (4)	5=Strongly Agree (5)
Is original, comes up with new ideas (open1)	○	○	○	○	○
Is curious about many different things (open2)	○	○	○	○	○
Is ingenious, a deep thinker (open3)	○	○	○	○	○
Has an active imagination (open4)	○	○	○	○	○
Is inventive (open5)	○	○	○	○	○
Values artistic, aesthetic experience (open6)	○	○	○	○	○
Prefers work that is routine (open7r)	○	○	○	○	○
Likes to reflect, play with ideas (open8)	○	○	○	○	○
Has a few artistic interests (open9r)	○	○	○	○	○
Is sophisticated in art, music, or literature (open10)	○	○	○	○	○

Page Break

partfemale **PART 6: DEMOGRAPHICS**

Please indicate **your gender**:

- ○ Female (1)
- ○ Male (0)
- ○ Gender non-conforming (999)

---

age In which year were you born:

▼ 2005 (3) ... 1953 (55)

---

edu What is the highest level of **education** you have completed?

▼ Less than High School (1) ... Professional Degree (JD, MD) (8)

---

ind Which of the following **industries** most closely matches the one in which **you are currently employed**?

▼ Forestry, fishing, hunting or agriculture support (1) ... Not currently employed (21)

---

suppos Do you currently hold a **supervisory position**?

- ○ YES (1)
- ○ NO (0)

X→ X→

robotexp Are you currently working with robotics or a robot-based technology?

- ○ Yes (1)
- ○ No (0)

X→ X→

techexp How comfortable are you with technology in general?

- ○ Very little (1)
- ○ Slightly too little (2)
- ○ Neither too much nor too little (3)
- ○ Slightly too much (4)
- ○ Very much (5)

nationality What is your nationality?

_____

Page Break

clarity Was anything in this survey unclear or is there anything you want to add? (optional)

_____

End of Block: Controls