

Fear at the Frontline - or Not?

A Mixed-Method Study on the Effects of Technological
Advancements on Frontline Employees' Psychological Safety

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Abstract:

In recent years, artificial intelligence and automation (AI-A) have advanced rapidly and are now among the most transformative forces reshaping business models and organizational practices. As these technologies continue to evolve and become more embedded in the workplace, their impact on employee well-being has drawn increasing attention. Psychological safety (PS), defined as the shared belief that the work environment is safe for interpersonal risk-taking, has emerged as a critical factor for employee engagement, learning, and adaptability in times of change. This thesis explores how frontline employees (FLEs) perceive AI and automation and how these perceptions influence their psychological safety. In addition, the study investigates the moderating role of general job insecurity (JI) in this relationship. Guided by established theories and prior research, the study addresses two central research questions: *(1) How do perceptions and attitudes toward technological advancements affect psychological safety among frontline employees? and (2) How does the degree of perceived job insecurity influence this relationship?* Using a mixed-method approach, the study combines survey responses from frontline employees in retail and warehouse settings with qualitative interviews involving both managers and associates. The results suggest that psychological safety is negatively influenced by AI-A and this relationship is moderated by job insecurity. Specifically, employees who already experience job insecurity in their workplace appear less affected by the additional pressure introduced by technological advancements. Qualitative findings further enrich these results, revealing a diversity of perspectives among employees, some view AI-A as a distant or future issue, while others lack awareness of how it is currently implemented. Notably, several participants perceive AI-A as a neutral or even supportive tool, rather than a threat. These findings highlight the importance of safeguarding the psychological safety of frontline employees as a critical factor in successfully navigating technological advancements.

Keywords: Psychological Safety, Job Insecurity, Artificial Intelligence

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Definitions and Abbreviations

Term	Abbreviation	Definition
Psychological Safety	PS	“the belief that the work environment is safe for interpersonal risk taking” (Edmondson, 2018, p.8).
Job Insecurity	JI	“a perceived threat to the continuity and stability of employment as it is currently experienced.” (Shoss, 2017)
Artificial Intelligence	AI	Technology capable of performing logical operations akin to human intelligence but at much greater speeds (Gao, K. and Alireza Zamanpour (2024)
Artificial Intelligence and Automation	AI-A	Development and integration of artificial intelligence (AI) and automation technologies within the workplace and drives innovation (Koo, Curtis and Ryan, 2021)
Independent Variable	IV	A variable which is utilized to predict an outcome.
Dependent variable	DV	The variable being predicted from the IV.
Frontline Employees	FLE	Employees who are essential to the daily operations of an organization and, as a result, are required to work on-site rather than remotely (Blau, Koebe and Meyerhofer, 2021)

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1. Introduction

1.1 Background

In recent years, artificial intelligence has undergone significant advancements, leading to widespread integration across enterprises driven by lower costs and greater accessibility to AI capabilities (Mckinsey 2025). According to the World Economic Forum (2023), artificial intelligence (AI) is among the most transformative factors shaping global business models today, underscoring its profound impact on society and the future of work.

The advancements in artificial intelligence (AI) are expected to have a profound impact on businesses, offering immense opportunities while also presenting significant challenges, particularly concerning job security (Kim and Kim, 2024). Research suggests that technological advancements, particularly in AI, constitute a primary driver of job insecurity (Wu, Liang and Wang, 2024). As discussed, the introduction and advancement of artificial intelligence (AI) are fundamentally reshaping contemporary business operations. Robinson et al. (2020) suggests that AI is increasingly redefining frontline employee (FLE) service encounters, assuming roles traditionally held by either employees or customers. Moreover, recent developments in AI indicate a progressive reduction in the necessity of human FLEs (Ruan and Mezei, 2022), highlighting the profound transformation AI is driving within the workforce. This study defines Frontline employees (FLEs) as employees who are essential to the daily operations of an organization and, as a result, are required to work on-site rather than remotely (Blau, Koebe and Meyerhofer, 2021).

This feeling of job insecurity not only has profound effects on individuals but also extends to organizations and society as a whole, necessitating a thorough assessment of their impact on the workforce (Kim and Kim, 2024). According to Jeong, Kim and Lee (2023), the fear of job insecurity not only negatively influences employees' attitudes and perceptions, such as job satisfaction and organizational identification, but also manifests in behavioral outcomes, including organizational deviance and safety behavior.

Fear has historically played a fundamental role in shaping human behavior, serving as a mechanism for avoiding adverse outcomes (Adams and Heß, 2015). In recent years, this

understanding has contributed to the emergence of the concept of psychological safety. Psychological safety was introduced by Schein and Bennis (1965) and building on this, Edmondson more recently defined psychological safety as “the belief that the work environment is safe for interpersonal risk taking” (Edmondson, 2018, p.8).

Psychological safety has emerged as a central concept in both management research and practice (Edmondson, 2018). Its significance in the workplace has been well established in prior studies (Frazier et al., 2017), demonstrating that a psychologically safe work environment can, among other benefits, enhance team performance by fostering creativity (Kim, Park and Kim, 2019) and facilitating knowledge sharing (Siemens et al., 2009). In recent work conducted by Google’s People Analytics unit identified psychological safety as one of the most critical characteristics of high-performing teams (Newman, Donohue and Eva, 2017), underscoring its significance in organizational success.

1.2 Aim and Research Question

The primary objective of this study is to enhance understanding of how the potential implementation of technological advancements in the workplace may affect employees. The focus is particularly on frontline employees (FLEs) in stores and warehouses, examining their perceptions and attitudes toward these changes. Specifically, the study examines how such advancements influence psychological safety and how job insecurity affects this relationship, in terms of how strongly JI impacts the relationship. Given that psychological safety is a critical factor in workplace dynamics (Frazier et al., 2017), this research will provide valuable insights for management practitioners, enabling them to better understand the implications of technological advancements on their FLEs and, by extension, their organizations.

To examine this relationship, this study draws upon Edmondson’s extensive work to identify if, and to what extent, psychological safety is affected by technological advancements. Additionally, it explores the concept of job insecurity and its potential moderating role in the relationship between technological advancements and psychological safety.

To address the stated purpose, this thesis aims to answer the following research questions:

- **RQ1:** *How does the perception and attitude towards technological advancements affect psychological safety amongst frontline employees?*
- **RQ2:** *How does the degree of job insecurity affect this relationship?*

1.3 Delimitations

Restricting the study to a single market enables empirical data collection under consistent conditions, ensuring that all participants operate within the same national regulatory framework and share a similar level of technological maturity (Taherdoost, 2021). Consequently, this thesis will focus exclusively on companies operating within the Swedish market.

This study focuses on FLEs, specifically those working in stores and warehouses. It includes both managers and associates in these companies. Consequently, the scope of this research is limited to the retail industry.

1.4 Disposition

This thesis is structured into five main chapters. The first chapter provides the background and outlines the motivation behind the research. The second chapter presents the theoretical framework, focusing on concepts such as psychological safety, along with a review of relevant previous studies. The third chapter details the methodology, describing the research approach and strategy employed in this study. Chapter four presents the empirical findings derived from both the quantitative and qualitative data collected. The findings are discussed in the fifth section of the report, which also presents the managerial and theoretical implications. The sixth section presents a summary of the report, along with a discussion of its limitations and suggestions for future research.

2. Theoretical frameworks

The following theoretical framework outlines the key variables, concepts, and prior research that underpin this study. It begins with a discussion of technological advancement, followed by an exploration of psychological safety and job insecurity, and concludes by examining the interconnections between these elements.

2.1 Defining and Conceptualizing

2.1.1 Technological advancements

2.1.1.1 Definition

In this study, technological advancements refer specifically to the development and integration of artificial intelligence (AI) and automation technologies within the workplace and drives innovation (Koo, Curtis and Ryan, 2021). Henceforth, this study will refer to this concept as AI-A (AI and Automation). These advancements encompass a range of innovations, including machine learning, robotic process automation, and intelligent decision-support systems, which are increasingly shaping organizational operations, workflows, and employee roles. The focus lies on how these technologies transform traditional work environments by augmenting or replacing human tasks, thereby influencing efficiency, productivity, and the social and psychological dynamics among employees (Guo et al. 2025).

2.1.1.2 Conceptualizing Technological advancements

The workplace is a dynamic environment in which AI is increasingly utilized as a supportive tool. In sectors such as the hospitality industry, AI is primarily implemented to improve efficiency, for example by lowering staffing costs, and to enhance the overall customer experience. (Koo, Curtis and Ryan, 2021). There is significant evidence suggesting that AI notably as social agents can replicate interactions with other humans (Vorobeve et al., 2022). Further on, the true impact that Automatization and AI will have in the workplace is an ongoing topic for debate, however, the potential capabilities of AI span a wide range.

AI and Automatization have transformed our economy and new capabilities for employees have been emerging and moving towards the emotional intelligence in the feeling economy (Huang, Rust and Maksimovic, 2019). This shift is largely driven by the extent to which automation and machines have taken over mechanical and routine tasks.

2.1.2 Psychological Safety

2.1.2.1 Definition

Edmondson defined psychological safety as “the belief that the work environment is safe for interpersonal risk taking” (Edmondson, 2018, p.8). This definition is coined based on understanding how interpersonal fear will not be a hinder in a safe workplace to create a fearless organization. For it to be present the colleges need to feel able to speak up with all relevant ideas, questions and concerns, in a trusted and respectful environment to be in a position to be sincere and even be obligated to be so. Edmondson further describes how these groups in the organization have a very interpersonal climate, and nevertheless having a strong corporate culture does not make an exception for a varied degree of PS. It is a work environment where Bluntness is anticipated and where employees can speak up without fear of retribution. “When employees feel psychologically safe, they’re empowered to iterate and take risks—leading to better team performance” (Baskin, 2023).

2.1.2.2 Conceptualizing Psychological Safety

The more conceptualized understanding of psychological safety refers to how teams function and collaborate within group settings in an organization. The concept of PS was first empirically explored in 1999, when Edmondson published her groundbreaking work examining the relationship between PS and learning behaviors in work teams (Edmondson, 1999). However, the foundation of her research can be traced back nearly 70 years to the work of Edgar Schein and Warren Bennis, who studied organizational change and group dynamics (Schein and Bennis, 1965). Their early insights laid the groundwork for the concept of PS, highlighting its importance in enabling open communication and interpersonal risk-taking. This demonstrates that the term is well-established and continues to play a significant role in understanding effective group dynamics (Edmondson, 2018).

There are key factors that underscore the importance of PS and the necessity for group members to feel they can speak up and address failures without fear of repercussions from colleagues or managers (Erkutlu and Chafra, 2016). Moving forward, PS is not simply a perk to be sought in the workplace, it is a fundamental necessity.(Edmondson, 2018, p. 26). PS is not only beneficial for employees but is also crucial for the overall success of the organization. When individuals refrain from speaking up, the organization's ability to innovate and grow is jeopardized.

2.1.3 Job insecurity

2.1.3.1 Definition

The term job insecurity (JI) can be used and defined in various ways, but Shoss (2017) explains it as “a perceived threat to the continuity and stability of employment as it is currently experienced.” According to Shoss (2017) JI exists on a continuum ranging from secure to insecure. Employees experience job security when they perceive their employment as stable and unthreatened.

JI can be further divided into two components: quantitative JI, which refers to the perceived threat of losing the job entirely, and qualitative JI, which concerns perceived threats to valued aspects of the job, such as pay, status, or working conditions (Shoss, 2017). However, this study does not focus on the distinction between quantitative and qualitative JI, but rather adopts a broader, more global understanding of the concept.

2.1.3.2 Conceptualizing Job Insecurity

JI pertains to an individual's current employment situation and is shaped by factors specific to their supervisory and organizational context, as well as broader social and economic conditions. Although external environments may appear objectively stable, employees can still experience varying levels of JI. This is because JI is ultimately a subjective perception, it reflects the extent to which individuals believe their job is under threat (Lee, Huang and Ashford, 2018).

According to Lee, Huang, and Ashford (2018) this uncertainty regarding the future characterizes this subjective and perceptual phenomenon. Most definitions emphasize that JI

is involuntarily experienced and often accompanied by feelings of powerlessness or lack of control. In this regard, JI is distinct from actual job loss, as the individual remains employed, but the future of their employment is uncertain. Moreover, JI differs from specific job-related stressors, such as work demands or time pressure, which tend to present clearer ways of resolving them.

2.2 Connections and Intersecting Research

2.2.1 Technological advancements and Job insecurity

Work is being sent offshore; automation, including robots that can do the jobs of humans more efficiently, is on the rise; and technological advancements are rapidly making many familiar jobs obsolete (Lee, Ashford and Huang, 2018). It is noted how advances in robotics and AI are increasingly enabling organizations to replace humans with intelligent machines and algorithms. Forecasts suggest these technologies will soon affect millions of workers across various occupations, replacing humans in numerous tasks (Granulo, Fuchs and Puntoni, 2019).

According to Vorobeve et al. (2022), employees engaged in analytical or "thinking" tasks, such as data analysis or problem-solving, are more likely to feel threatened by AI than those performing interpersonal or "feeling" tasks like teamwork or customer communication. This fear is driven by comparisons between human abilities and AI capabilities, especially when AI is perceived to outperform humans in cognitive domains. As a result, such comparisons can lead to increased job insecurity and even reduce employees' confidence in their own performance.

Kim, Kim and Lee (2024) state that "In the rapidly advancing landscape of AI, technologies such as automation, machine learning, and natural language processing are transforming the workplace in unique ways. Each application has distinctive features that could influence employees' perceptions of job insecurity, and subsequently, employees' depression in different ways." Meaning that significantly, the mechanization of tasks through automation may heighten perceptions of JI among workers.

In environments that are characterized by high-pressure and high stress, AI and automation can reduce the need for employees to focus on repetitive tasks (Gao and Zamanpour, 2024). Further AI enables efficiency and therefore opens up for stressors such as JI and the persistent demand for continuous skill development. Unlike traditional causes of JI, like economic recessions or corporate restructuring, the uncertainty brought on by AI arises from technological progress that has the potential to mimic or exceed human cognitive skills in a wide range of tasks. (Kim and Kim, 2024) The swift progression of AI technology heightens uncertainty about future job opportunities, making AI-driven JI a pressing issue for both researchers and industry professionals.

2.2.2 Psychological safety and Job Insecurity

Previous research suggests that the connection between JI and PS among employees remains relatively underexplored. However, some studies indicate that JI negatively influences employees' perceptions of PS (Kim, Kim and Lee, 2024)

According to Jeong, Kim, and Lee (2023), a high level of PS within an organization encourages employees to openly share their ideas and opinions, as well as to seek help from colleagues, knowing that their input will be met with support rather than judgment. Conversely, when PS is low, employees may experience fear and pressure, leading to hesitation in voicing their thoughts (Jeong, Kim, and Lee, 2023). The authors further argue that heightened JI contributes to a sense among employees that they are not respected, which in turn discourages them from raising concerns or offering suggestions that could positively influence the organization's growth and success.

In line with this, employees who experience JI may feel compelled to maintain an idealized or "perfect" professional image in order to safeguard their employment. This perceived necessity often inhibits them from expressing their authentic selves, as doing so may be associated with risk or vulnerability (Edmondson, 1999; Kahn, 1990). This research indicates that in such contexts, individuals are inclined to suppress concerns and withhold critical input, thereby compromising themselves as a means of avoiding potential rejection.

It is important to note that the relationship between JI and PS can vary across different workplace contexts. These variations may be influenced by several moderating factors, which

can either strengthen or weaken the connection between JI and PS. Such factors may include individual characteristics (e.g., personality traits), length of employment, as well as organizational policies, norms, and culture (Kim, Kim and Lee, 2024).

To further understand the mechanisms behind this relationship, several theoretical frameworks can be applied. The Conservation of Resources (COR) theory, proposed by Hobfoll (1989), suggests that individuals are motivated to protect and maintain their valued resources, which can include personal characteristics, objects or conditions. JI threatens these resources, and the mere anticipation of resource loss can lead to a heightened state of vigilance. This psychological response may undermine employees' sense of stability and diminish feelings of PS in the workplace (Halbesleben and Bowler, 2007).

The Job Demands–Resources (JD-R) model (Bakker and Demerouti, 2007) also provides a useful framework for understanding this relationship. According to the model, job demands are aspects of employment that require both sustained effort and are associated with physiological and psychological costs. JI can be considered a significant job demand that depletes employees' mental and emotional resources, leading to feelings of uncertainty and unsafety. As such, high job demands, particularly persistent insecurity, can overwhelm employees and reduce psychological safety (PS) by exceeding their ability to cope (Bakker and Demerouti, 2007).

Another theoretical framework that helps to explain this relationship is Maslow's Hierarchy of Needs (Maslow, 1943). This model emphasizes that safety is one of the most fundamental human needs, encompassing both security and stability. When JI is present, this basic need for safety is threatened, which can in turn undermine an individual's sense of PS in the workplace. (Maslow, 1943)

2.2.3 Technological advancements and Psychological Safety

Gao and Zamanpour (2024) suggest that technological advancements, particularly the integration of artificial intelligence (AI), can positively influence PS in the workplace. When AI is implemented effectively, it has the potential to minimize human error, enhance decision-making through data-driven insights, and contribute to an organizational culture centered around innovation and continuous learning. By supporting employees with tools such as predictive analytics and real-time data, AI can reduce the mental burden associated

with high-stakes decisions. This sense of support and increased control helps to lower the perceived risk of failure and fosters a greater sense of PS.

When employees feel that AI tools assist rather than replace them, and that they are supported rather than scrutinized, levels of anxiety tend to decrease. This can, in turn, lead to increased job satisfaction and a more collaborative and secure working environment. Thus, the effective integration of AI not only empowers employees but also creates conditions that are conducive to psychological safety, confidence in decision-making, and productive teamwork (Gao and Zamanpour, 2024).

Through the lens of Social Exchange Theory (Blau, 1964), employees' perceptions of organizational support, such as access to training and clear communication about AI's purpose, can help ease these concerns and foster a safety culture. (Gao and Zamanpour, 2024). In an interview Edmondson highlights how safety culture is a building on safety climate and PS, but it might be more resilient and durable and refers to norms and unwritten rules in the workplace. It can be expectations about what will happen if you raise a concern. Over time, employees must feel encouraged to be honest, open, and courageous in their communication, thereby contributing to a strong organizational culture that promotes PS (Quentic, 2021). However, Gao and Zamanpour (2024) also mention that the introduction of AI disrupts traditional work processes by shifting the focus toward precision and faster decision-making. This transformation can create unpredictability and be perceived as a threat to JI.

Kim, Kim, and Lee (2024) propose that self-efficacy in AI usage, defined as employees' proficiency and confidence in using AI technologies, may buffer the negative impact of JI on PS. Drawing on self-efficacy theory, they suggest that employees with high self-efficacy in AI use are more likely to feel capable and confident in utilizing such technologies, which can mitigate the adverse effects of JI on their sense of PS.

Employees who perceive themselves as proficient in AI are more likely to adopt and engage with new technologies effectively. This sense of competence contributes to feelings of control and mastery over their tasks, which, in turn, enhances PS (Kim, Kim, and Lee, 2024)

However, the findings of Kim, Kim, and Lee (2024) revealed that self-efficacy in AI usage did not moderate the relationship between JI and PS as initially hypothesized. This suggests that confidence in using AI technologies alone may not be sufficient to buffer the negative effects of JI on PS. The authors propose that other factors, such as perceived organizational support or general adaptability, may play a more significant role in influencing this relationship.

In contrast, Gao and Zamanpour (2024) concluded that AI implementation in the workplace can enhance efficiency and accuracy, while also fostering innovation and skill development. They emphasize that “by responsibly leveraging AI, financial institutions can unlock new growth opportunities, drive innovation, and enhance customer satisfaction while safeguarding the well-being of their workforce.” These findings highlight the potential of AI to support both organizational performance and employee well-being when integrated thoughtfully.

2.3 Research Gap and Hypothesis Formulation

To date, there is a notable lack of research addressing how AI and automation influence psychological safety among frontline employees, particularly through the integration of mixed-methods. Previous research has examined AI integration and workplace collaboration, particularly its impact on employees' PS (Wu, Liang and Wang, 2024; Gao and Zamanpour, 2024). However, there is a gap in the literature regarding how employees' perceptions and attitudes toward AI implementation, rather than its effects after integration, affect PS.

While existing studies have explored AI-induced JI, primarily focusing on the relationship between AI implementation and JI (Kim and Kim, 2024), this study takes a broader approach. It distinguishes between general JI and employees' attitudes and perceptions of AI-A as separate factors. The retail sector has not yet been significantly affected by AI implementation in terms of job displacement. Instead, technology is more commonly used to improve system efficiency, such as demand forecasting and supply chain management (Shopify, 2024). As a result, the expected connection between technological advancements and JI among FLEs may not have fully emerged. Therefore, understanding employees' perceptions of AI-A is crucial, along with examining past and present JI trends. This distinction enables an investigation into how general JI moderates the relationship between

AI-A and PS. In contrast to prior research this study exclusively concentrates on artificial intelligence and automation, collectively referred to as AI-A. Therefore, the hypothesis is;

- ***H1:*** *Perceptions and attitudes towards AI-A negatively correlates with psychological safety.*
- ***H2:*** *Job insecurity moderates the relationship between perceptions and attitudes toward AI-A and psychological safety, such that when job insecurity is high, it negatively impacts this relationship.*

3. Method

3.1 Research Approach

This study employs a mixed-methods approach, integrating both quantitative and qualitative methods to comprehensively address the research questions. The rationale for this methodological choice is to enhance the depth and robustness of the study's conclusions, ultimately contributing to greater knowledge and validity (Schoonenboom and Johnson, 2017). While the study adopts a mixed-methods design, it is primarily quantitative, with the qualitative component serving an exploratory role and providing validation for the quantitative findings.

By utilizing a mixed-methods approach, this study leverages the strengths of both methodologies, combining the statistical rigor of quantitative analysis with the contextual depth of qualitative insights. This approach facilitates a multi-level analysis, capturing both broader patterns from the quantitative data and more nuanced individual perspectives from the qualitative data (Scalcău, 2023).

This is also connected to triangulation, as described by Jick (1979) as, "the combination of methodologies in the study of the same phenomenon." who emphasize that using multiple methods enables researchers to validate findings by validating results across different approaches. In this study, triangulation strengthens the credibility of the conclusions by integrating survey data with interview insights, capturing both breadth and depth in understanding employees' experiences of AI-related change.

The initial intention was to conduct a purely quantitative study, as this is a widely used and reliable method for measuring psychological safety (Edmondson, 2018). However, given that this study specifically explores FLE attitudes and perceptions of AI-A, it became evident that such nuanced and subjective perspectives are more effectively captured through qualitative methods (Scalcău, 2023). Consequently, a mixed-methods approach was adopted to enable both the identification of general patterns and the depth of qualitative insights.

3.1.1 Quantitative method

3.1.1.1 Survey Design

The quantitative data were collected through a survey designed using the Qualtrics platform. The survey began with an informed consent form, aligned with GDPR regulations, to ensure that participation was both voluntary and anonymous. The estimated completion time for the survey was approximately five minutes. Given that the study focuses on Swedish organizations, the survey was created and distributed in Swedish.

The survey encompassed questions within the following areas:

- **Demographics:** including participants' role, gender, age, tenure, and workplace size.
- **Psychological Safety:** assessed using Edmondson's (2018) seven-item scale.
- **Job Insecurity:** measured with the four-item Job Insecurity Scale developed by Vander Elst, De Witte, and De Cuyper (2014).
- **Perceptions and Attitudes Toward AI-A:** evaluated using a four-item scale adapted from Brougham and Haar (2018).

To enhance data quality, the survey also included an open-ended comment field and an attention check question. A 5-point Likert scale was used for the attitudinal items, ranging from 1 = "strongly disagree" to 5 = "strongly agree". The complete survey instrument is available in Appendix 1, presented in both Swedish and English.

3.1.1.2 Sampling Procedure

This study is focusing on FLEs working at various hierarchical levels within retail stores and warehouses. Accordingly, participants in the quantitative survey included both associates and managers, allowing for a diverse range of perspectives from individuals engaged in both day-to-day operations and supervisory responsibilities.

The sample is limited to companies based in Sweden, meaning the participants are FLEs from various cities across the country. A total of 103 responses were collected, representing a variety of roles and geographic locations, ensuring a broad and diverse view of employee experiences.

3.1.1.3 Data Collection

The data for the quantitative method was collected over a period of approximately 2 months, between 31st of February and 22nd of April. Initially, the survey was distributed via email to managers at various stores and warehouses, who were asked to forward the survey link to their employees. However, as the initial outreach did not yield sufficient responses, additional distribution methods were implemented to increase participation.

To broaden the sample and improve response rates, the survey was subsequently shared through direct contact on LinkedIn, targeting individuals in managerial positions and encouraging them to distribute the survey within their respective organizations. Furthermore, several store locations were visited in person. During these visits, employees were informed about the purpose of the study and invited to participate. QR codes linking to the survey were also distributed to ensure accessibility for employees who were not present at the time.

Participation was entirely voluntary and anonymous, and no personally identifiable information was collected. All responses were securely stored using the Qualtrics platform, in full compliance with GDPR and the institution's data protection policies.

3.1.1.4 Data Analysis

The data collected through the Qualtrics survey platform underwent several preparatory steps before analysis. Initial data cleaning was performed in Microsoft Excel, which included removing responses from non-consenting participants and incomplete submissions.

Additionally, participants' job roles were standardized and categorized into two main groups: associates and managers. For instance, responses indicating 'Lagerarbetare' (warehouse associate) were classified as associates, while 'Butikschef' (store manager) was categorized as managers.

First, an Ordinary Least Squares (OLS) regression analysis was conducted to examine the direct relationship between AI-A and PS (RQ1, H1). Second, a moderation analysis using hierarchical multiple regression was performed to investigate JIs moderating effect on this relationship (RQ2, H2). Prior to conducting these analyses, several statistical assumptions were tested to ensure the validity of the results. These included checks for multicollinearity

through Variance Inflation Factors (VIF), autocorrelation using the Durbin-Watson statistic, and heteroscedasticity through residual plots.

3.1.2 Qualitative method

3.1.2.1 Interview Design

The qualitative method of this study was conducted through semi-structured interviews. The interviews provide a richer and more nuanced understanding of employees' perspectives, as they create a setting where respondents can express their thoughts and opinions freely, without the social pressures or conformity that might arise in group settings. (Malhotra and Stayabhusan Dash, *Économiste*, 2019). As this was a semi-structured interview, a set of predefined questions was used to guide the discussion. These questions can be found in Appendix 2.

This may be particularly important in the context of this study, as it explores psychological safety. Given that psychological safety concerns employees' belief that the work environment allows for interpersonal risk-taking without fear of negative consequences (Edmondson, 2018), it may be more challenging for individuals to speak openly about such experiences in larger settings, where there is a risk that their responses could become known to colleagues or managers.

3.1.2.2 Sampling Procedure

As this study focuses on FLEs, the participants in the interviews consisted of individuals working at different hierarchical levels within stores and warehouses, ranging from managers to associates. In total, six semi-structured interviews were conducted with both managers and associates. Since the qualitative method in this study is intended to capture more nuanced individual perspectives (Scalcău, 2023), it was important to include participants from multiple organizational levels. Therefore, participants were selected purposively to reflect this diversity and to ensure a broader range of insights.

3.1.2.3 Data Collection

The six interviews with both the managers and associates took place on two separate occasions: February 28 and March 18, 2025. The duration of the interviews varied, ranging

from approximately 6 minutes to 40 minutes, depending on the depth of the discussion and the availability of the participants. The participants all decided on the extent and length of the interview. All interviews were conducted in a private setting, recorded with the informed consent of each participant, and subsequently transcribed to ensure accuracy and facilitate thorough analysis. The interviews were conducted entirely in Swedish.

3.1.2.4 Data Analysis

The interview data in this study were analysed using a thematic analysis approach, following Braun and Clarke's (2006) model. This method allowed for identifying patterns of meaning across the material while remaining open to the nuanced perspectives of both managers and front-line employees. The process began with familiarisation through repeated reading of the transcripts, followed by systematic coding of the data. Each author independently generated initial codes and reflected on emerging ideas relevant to the research focus (Bell, Bryman and Harley, 2019).

Themes were then identified and organised through collaborative discussions to ensure consistency and depth. These discussions also helped refine the themes and resolve any differences in interpretation. The analysis followed an inductive approach, meaning themes were not predetermined but developed from the data itself. Once recurring patterns had been identified and no new themes appeared in the data, the analysis was considered complete.

Finally, the themes were reviewed, defined, and named in alignment with the three central research areas: psychological safety, job insecurity, and perceptions of technological advancement. The findings are presented through thematic categories supported by illustrative quotes, aiming to provide clarity and connection to the study's core questions. The analysis process considered both convergences and divergences in responses between associates and managers as FLEs.

3.2 Measurement scales

In the quantitative study, several well-established measurement scales were adopted to assess employees' perceptions and attitudes toward AI-A, PS, and JI.

3.2.1 Measuring perception and attitude towards technological advancements

To measure employees' perceptions and attitudes toward technological advancement, this study employs a four-item scale adapted from Brougham and Haar (2018). While the original scale references "smart technology, artificial intelligence, robotics, and algorithms" (i.e., STARA), the present study focuses specifically on AI and automation (AI-A). Accordingly, the wording of the items was adjusted to refer exclusively to AI and Automation. Additionally, the orientation of the scale was modified from assessing levels of concern or worry to instead capture the degree of belief or confidence employees hold regarding AI.

3.2.2 Measuring Psychological Safety

To measure PS Edmondson has created a Likert scale with seven questions to use for surveys. (Edmondson, 2018). Furthermore, the measure has been proven to be robust, even when translated into other languages. The scale should offer to be neutral, so a five or seven scale is preferred, this is to not force the respondent to pick a side. Edmondson (2018) also reported that the scale demonstrated strong internal consistency, indicating that it is a reliable instrument for measuring psychological safety.

3.2.3 Measuring Job Insecurity

In line with the definition of job insecurity, there are multiple approaches to measuring the construct. In this study, the Job Insecurity Scale (JIS) is employed, a global, four-item scale designed to assess overall perceptions of job insecurity. The JIS has been validated for its reliability and validity in capturing both the perceived threat of job loss and the associated worry or concern about losing one's job (Vander Elst, De Witte, and De Cuyper, 2014). This scale has been successfully applied across various contexts and countries, and has been translated into multiple languages, further supporting its cross-cultural applicability (Vander Elst et al., 2014).

3.3 Reliability and validity

To ensure the trustworthiness of this study, both reliability and validity were carefully considered across the quantitative and qualitative components.

For the quantitative part, all constructs were measured using validated and reliable scales. Psychological safety was assessed using Edmondson's (1999) scale ($\alpha = 0.82$), job insecurity using Vander Elst et al.'s (2014) scale ($\alpha > 0.70$), and perceptions of AI and automation using an adapted version of Brougham and Haar's (2018) scale ($\alpha = 0.85$). As alpha values above 0.60 are considered acceptable (Malhotra & Dash, 2019), the internal consistency of all measures was deemed satisfactory. Additionally, attention-check items were included to ensure response quality.

For the qualitative part, six semi-structured interviews were conducted. Although the number is limited, the purpose was not to generalize, but to gain rich, illustrative insights from relevant participants, a common practice in qualitative research (Braun & Clarke, 2006). All interviews were transcribed verbatim and analysed thematically, with both authors involved in coding to ensure reliability through researcher triangulation. Combining qualitative and quantitative findings with previous research enhanced the overall validity of the study through methodological triangulation, as recommended by Jick (1979).

4. Results

4.1 Quantitative Result

The quantitative component of this study yielded 103 survey responses from FLEs, including both managers and associates working in retail stores and warehouses across Sweden. Prior to analysis, the dataset underwent screening to exclude participants who did not provide consent and those with incomplete responses. After removing five non-usable submissions, the final analytical sample consisted of 98 respondents. This sample provided a robust foundation for the statistical analyses that follow.

4.1.1 Descriptive statistics

The subsequent section provides descriptive statistics from the survey, divided into two parts (1) Descriptives of participants and (2) Descriptives of the key measures.

Descriptives of respondents

In the table below, the gender and age distribution across participants can be observed. The data demonstrates relative parity between genders. Age categories have been arranged in ascending chronological order, progressing from the youngest to oldest age group. Analysis reveals that a substantial proportion of the sample, a portion 50% of participants, falls within the 18 to 29 years demographic segment.

	Frequency (n)	Percentage (%)	Cumulative (%)
Gender			
Women	51	52.04	52.04
Man	47	47.96	100.00
Age			
18-29	49	50.00	50.00
30-39	21	21.43	71.43
40-49	20	20.41	91.84
50-59	7	7.14	98.98
60-69	1	1.02	100.00
70+	0	0.00	100.00

Table 1: Age and Gender of Survey Participants

The descriptive statistics pertaining to participants' workplace roles (manager or associate), tenure, workplace size, and team size are presented in Table 2.

	Frequency (n)	Percentage (%)	Cumulative (%)
Work Role			
Manager	34	34.7	34.7
Associate	64	65.3	100
Work duration			
A few days	0	0.00	0.00
A few weeks	4	4.08	4.08
A few months	26	26.53	30.61
More than a year	19	19.39	50.00
More than 2 years	49	50.00	100.00
Workplace size			
2-11	9	9.18	9.18
12-20	11	11.22	20.41
21-50	45	45.92	66.33
51-70	7	7.14	73.47
70+	26	26.53	100.00
Workteam size			
2-5	30	30.61	30.61
6-10	30	30.61	61.22
11-20	21	21.43	82.65
21-50	15	15.31	97.96
50+	2	2.04	100.00

Table 2: Workplace roles, tenure, workplace size, and team size of participants

Descriptives of key measures

Table 3 reports the descriptive statistics for the key constructs under investigation: psychological safety (PS), job insecurity (JI), and AI and Automation (AI-A). Higher scores on PS are indicative of greater perceived psychological safety; accordingly, the observed mean of 3.9650 suggests that participants generally perceive themselves as psychologically safe in their work environment. In contrast, higher scores on JI denote elevated levels of job JI; thus, the relatively low mean of 1.6531 implies that participants are not experiencing notable JI. Similarly, higher scores on AI-A reflect higher fear and concerns; the mean score of 2.1097 indicates that, on average, participants exhibit a relatively low level of fear and concern of AI-A.

	Obs	Mean	St.Dev	Min	Max
Psychological Safety	98	3.9650	.062894	1	5
PS_1 (R)	98	4.3061	.087834	1	5
PS_2	98	3.84	1.002	1	5
PS_3 (R)	98	4.3265	1.02319	1	5
PS_4	98	3.64	1.294	1	5
PS_5 (R)	98	4.3980	.093874	1	5
PS_6	98	3.31	1.467	1	5
PS_7	98	3.94	.0993	1	5
Job Insecurity	98	1.6531	.075525	1	5
JI_1	98	1.41	.810	1	5
JI_2 (R)	98	1.8673	1.09014	1	5
JI_3	98	1.84	1.224	1	5
JI_4	98	1.50	.987	1	5
AI and Automation	98	2.1097	.94914	1	5
AI-A_1	98	2.91	1.244	1	5
AI-A_2	98	1.90	1.162	1	5
AI-A_3	98	1.76	1.104	1	5
AI-A_4	98	1.88	1.169	1	5

Table 3: Descriptives of key measures

4.1.2 Hypothesis and Research Question Results

In the subsequent section, the results forming the basis for the assessment of the study's research questions and hypotheses are presented. The section is structured into two parts, each addressing one of the research questions and its corresponding hypothesis.

The first part addresses the following research question and hypothesis:

- **RQ1:** *How does the perception and attitude towards technological advancements affect psychological safety amongst frontline employees?*
- **H1:** *Perceptions and attitudes towards AI-A negatively correlates with psychological safety.*

To evaluate the hypothesis outlined above, an ordinary least squares (OLS) regression analysis will be conducted, examining the relationship between AI-A and PS. Prior to

conducting the regression analysis, Pearson correlations were examined to understand the relationships between the variables (see Table 4). In the table ‘***’ denotes statistical significance at the 0,001 level.

Variable	1	2	3
1. Psychological safety	-	-	-
2. Job Insecurity	-0.399**	-	-
3. AI & Automation	-0.448**	0.578**	-

Table 4: Correlation matrix between the different variables

Results revealed significant correlations between all variables. AI-A showed a significant negative correlation with PS ($r = -.448$, $p < .001$) and a significant positive correlation with JI ($r = .578$, $p < .001$). Additionally, JI demonstrated a significant negative correlation with PS ($r = -.399$, $p < .001$). The significant correlations between both predictors (AI and Automation and job insecurity) and the dependent variable (psychological safety) supported their inclusion in the subsequent regression analysis.

The general specification of the OLS regression model is as follows:

$$Y_i = \beta_0 + \beta_1 AI - A + \varepsilon_i$$

where Y_i represents PS, AI-A denotes AI and Automation and ε_i is the error term capturing the influence of unobserved factors. This then leads to the OLS regression, which is graphically present in Figure 1 below. The results of the OLS regression are illustrated in Figure 1. In the figure, “***” indicates statistical significance at the $p < .001$ threshold, “ β ” represents the standardized beta coefficient, and “SE” denotes the standard error of the coefficient.

No assumption violations were identified in the regression analysis, thereby ensuring the validity of the results. The Durbin-Watson statistic of 1.853 indicated no evidence of autocorrelation. Multicollinearity was not a concern, as demonstrated by the Variance Inflation Factor (VIF) value of 1.000, which is expected when using a single predictor

variable. Furthermore, inspection of the scatterplot of standardized residuals against standardized predicted values, which can be found in Appendix 3, revealed no discernible pattern, suggesting homoscedasticity of residuals.

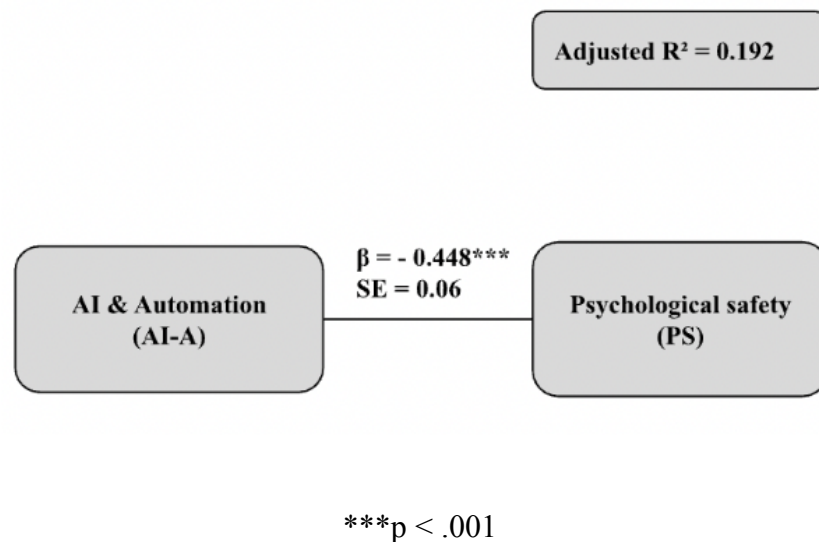


Figure 1: OLS regression with AI and Automation (IV) and Psychological safety (DV)

The analysis revealed a significant negative relationship ($\beta = -0.448$, $p < .001$, $SE = 0.06$), indicating that higher levels of AI-A are associated with lower levels of PS, thereby supporting hypothesis 1. The adjusted R^2 (0.192) indicates that 19.2% of the variance in PS (DV) can be explained by AI-A (IV). This moderate level of explained variance suggests that while AI-A is a significant predictor of PS, approximately 80.8% of the variance in PS might be attributed to other factors not captured in this model.

These findings directly address RQ1 by demonstrating that FLEs perception of technological advancements, specifically AI-A, has a significant negative effect on their PS. The moderate strength of this relationship ($\beta = -0.448$) suggests that higher levels of AI-A decrease PS. This provides clear evidence, supporting H1, confirming that AI-A indeed negatively correlates with PS.

The second part examines the second research question and its associated hypothesis:

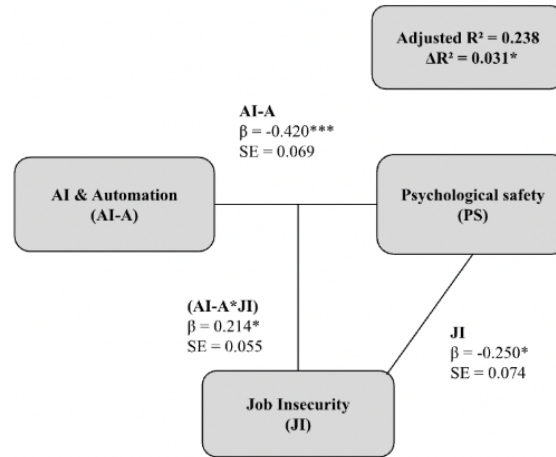
- **RQ2:** *How does the degree of job insecurity affect this relationship?*
- **H2:** *Job insecurity moderates the relationship between perceptions and attitudes towards AI-A and psychological safety, such that when job insecurity is high, it negatively impacts this relationship.*

To examine the potential moderating influence of JI on this relationship, a moderated regression analysis was conducted. The following statistical model was specified to test the hypothesized moderating effect of job insecurity on the established relationship:

$$Y_i = \beta_0 + \beta_1 AI - A + \beta_2 JI + \beta_3 (AI - A * JI) + \varepsilon_i$$

where Y_i denotes Psychological safety, AI-A denotes AI and Automation, JI denotes job insecurity, (AI-A*JI) represent their interaction term and ε_i is an error term. The validity of the moderation analysis results is further supported by the absence of assumption violations. The Durbin-Watson statistic of 1.836 indicated no evidence of autocorrelation. The VIF values for all predictors (ranging from 1.460 to 1.779) were well below the critical threshold of 10, confirming that multicollinearity was not a concern and that the predictor variables were sufficiently independent of each other. Additionally, no indications of heteroscedasticity were observed; inspection of the scatterplot of standardized residuals against standardized predicted values, which can be found in Appendix 4, revealed no discernible pattern.

Based on this, a moderation analysis was conducted which has been graphically illustrated in figure 2 below.



* $p < .05$, *** $p < .001$

Figure 2: Moderation analysis with AI and Automation (IV), Job Insecurity (Moderator), and Psychological Safety (DV)

The analysis revealed a significant moderating effect of JI on the relationship between AI-A and PS ($\beta = .214$, $p < .05$). The positive interaction coefficient suggests that high JI buffers the negative relationship between AI-A and PS, meaning that the negative effect of AI-A on PS becomes weaker as JI is higher. These findings do not support hypothesis 2, which proposed that the negative effect of perception and attitude towards AI-A on PS would be stronger under conditions of high JI. The positive nature of the interaction term indicates that while both AI-A and JI individually have negative effects on PS ($\beta = -.420$, $p < .001$; $\beta = -.250$, $p < .05$ respectively), their combined effect is less negative than would be expected from their individual effects alone.

The final moderation model explained 23.8% of the variance in PS (Adjusted $R^2 = .238$). The interaction between AI-A and JI accounted for a significant additional 3.1% of this variance ($\Delta R^2 = .031$, $p = .048$), indicating that the relationship between AI-A and PS significantly varies depending on employees' level of JI.

4.2 Qualitative results

4.2.1 Qualitative Summary

The interviews revealed that FLEs, both associates and managers, largely view AI and Automation (AI-A) as supportive tools, particularly in relation to logistics and task structure. While some participants highlighted the potential of AI-A to improve efficiency, others shared concerns about poor system integration and a lack of communication. These practical limitations contributed to a relatively low level of perceived threat, especially among associates with firsthand experience of current tools. Perceptions of PS and JI varied, often influenced by organizational role. The following findings are structured around the three core areas of analysis: psychological safety, job insecurity, and perceptions of technological advancement, illustrated with interview quotes to ground the themes in participants' experiences.

4.2.2 Findings

4.2.2.1 Psychological safety

Risk and errors

The respondents collectively described the grocery retail environment as one where errors are frequent and to some extent expected. All managers interviewed shared a consistent view that mistakes are a natural part of daily operations, and that the nature of the industry makes such errors inevitable.

“Because things happen, we break goods, we drive into stuff, we break doors, you break the truck, you pull out a cable and we try to work into the culture for a long time...” – Manager 3

While the managers had an collective understanding that the work environment is prone to error, one associate offered a slightly different view, stating that they did not perceive the work environment as high risk. This suggests that while management may normalize errors as systemic, employees on the floor may view them as manageable or less severe.

“I get the responsibility that you have to place certain orders and then maybe you take a little more of certain goods that maybe sometimes have messed up a bit that has meant that you

might have gone in sealed on those goods instead. Because you don't know how much is sold, but otherwise there are no specific risks like that. It doesn't feel like it's a very risky job, what I do doesn't feel like it affects that much.” – Associate 3

However everything is registered according to the routines set in place, and another associate emphasizes how these routines are good for errors in the store, meaning that according errors are doomed to happen.

Individual responsibility

Respondents consistently stated that they do not feel individually blamed when mistakes happen. Instead, errors are seen as part of daily work, with performance judged more on group outcomes than individual fault. One manager noted a shift from a past blame culture, explaining that focusing on individual accountability had caused issues, such as unreported waste, which harmed store operations and transparency:

“Then there was a waste in between, and we were on a sky-high waste, because no one dared to register anything ... And that's not good, so the first year the focus was to have as high visible waste as possible. And then we have the dairy here, he has crushed this many products in a year, well done! applause He won!. Because then you get data to work with. “ –

Manager 1

When associates were asked about individual responsibility and tolerance for error, one highlighted that making mistakes was acceptable, as long as they were not repeated frequently:

“Well, if you do it a few times, then it's okay if it doesn't really work out, it's usually received quite well. Then you solve it and then it's a bit like this, learn from your mistakes.” –

Associate 3

Among the other associates, there was a general agreement that individual responsibility was not heavily emphasized, and that accountability was more often approached as a shared, group responsibility.

Teamwork

The managers explained how the sector often divides the staff into different teams, depending on morning/day team and day/evening day team. Then there are different areas in the store.

When referring to teams he said:

“Getting them to work together is difficult. When I came here four years ago, there was no team spirit at all, people felt a little bad and no one worked in teams at all, you didn't help each other but just beat each other up. Poor management in the store.” – Manager 1

This was also highlighted by another manager, adding how some teams have a better dynamic since they work whole shifts, needing to solve problems that are occurring. According to the manager these teams work better together, when issues need to resolve, since they happen on a daily,

“It's not the same that it goes hand in hand and work, but it gets a better team spirit when you work together in a whole shift because then you go and talk about all kinds of things while you work and then it's easier to solve problems that come up and challenges. If you work around during the day and solve the days together in a different way. When you're on your own, it's more of a drop-off and then you get to work.” – Manager 3

However, an associate's point of view highlighted their comfort in asking for help as often occurring and a part of the working environment. Even if the associate was not a full-time employee.

“You can always ask for help like this, from the boss or from my colleagues. We work as a team, so we have a picking team so everyone picks fruit and vegetables in the morning, so not only me but I'm responsible and do other things like orders and responsible for making sure there is stuff, but otherwise we work as a team”. – Associate 2

The overall teamwork according to both associates and managers seemingly worked well and there was a perceived security for asking for help and a common responsibility for the store, even if the task done was not connected to the individual area of responsibility.

4.2.2.2 Job insecurity

Security of employment

When asked about how the feeling of the current employment was, there was a common agreement of feeling secure within their roles and having role clarity.

“Yes absolutely, you kind of have your clear roles, then it is also very often at this store, we have a lot of sick calls and things like that, so then you have to jump around a bit and then so, but otherwise it's, you have your department, that's what you have to pick.” – Associate 3

However it also highlights the need to be agile for changes since it happens but that the structures and routines in place are allowing for new roles when needed.

One employee even said that their work environment almost is like a family, and it can be hard for new people to find their place in their work environment,

“Considering that we are a very small store, it is like a family if you are to use clichéd words. You also notice that if you get a new person in, it can be difficult for them to try to force their way in, i.e. what role should they have.” – Associate 1

AI-induced job insecurity

The implementation of AI technologies such as camera systems and automation tools was described by several managers as potential contributors to job insecurity, particularly among associates. One manager explained that working under constant surveillance could affect how secure employees feel in their roles, since the number of cameras won't change the amount of employees needed:

“No, but working in an environment where there are quite a lot of camaraderie and where there is a system that reviews everything, can have an impact.” – Manager 1

He further elaborated that perceptions of AI often depend on how the topic is framed or discussed. When asked whether the technology could make employees feel less safe in taking risks or making mistakes, he reflected when asked if the potential of working in an environment where everything is analyzed could increase job insecurity:

“Yes if you ask them like that, it probably depends on how you ask, how do you think it is to have a camera system in the store? Oh that's no problem, or you ask: How is it that an AI constantly analyzes everything you do in the shop and constantly questions the fraudulent behavior behind it. Then you might get other answers, so a little how to ask the question.” –

Manager 1

The manager clearly acknowledged that AI and automation may pose a greater threat to job security among employees in lower positions compared to those in more senior roles.

“Yes, for the employees far down, there are probably more negatives than for those who sit in the top shift, of course. ... but that their jobs are threatened, of course. There are about 50 employees today, removing that cashier, then 15–20 people are gone. Removing the picks, soon it's just me and XX left. This is just the case, hello robot hello robot.” – Manager 2

Despite these implications, it was also mentioned that concerns related to job insecurity may not always reach upper management. Instead, such worries might circulate informally among staff. When asked if anyone had ever raised concerns about AI or other technological advancements, and whether employees feared being replaced, the manager continued by saying that managers are often the last to hear about serious concerns.

“No, but it's also at the top that they're the ones who hear it last too. It can be for better or for worse. Down there, there is a lot of gossip.” – Manager 2

However, this concern was not strongly echoed among associates. One respondent expressed that while technological advancements might affect how work is carried out, they were not viewed as an immediate threat to their job:

“No, I have a very hard time seeing it, because I wouldn't see that it would replace me in my work as well, but definitely that it could affect me in such a way that it might simplify my work, I think. But then I don't dare say that you can be replaced out of it at the moment as well as more the system behind it.” – Associate 3

This perception was also supported by a manager who stressed the importance of the customer behavior in store for the effectiveness of automation. He noted that even if AI is introduced, employees often outperform customers in speed and efficiency at checkout:

“... the cashier is often faster than the customer anyway and there okay we should streamline the checkout work when the cashier is already faster than the customer. Because then there will only be setup time for the cashier when it waits for the customer to finish their part.” –

Manager 3

4.2.2.3 Technological Advancements

Perception of AI and Use

All respondents were asked to share their perceptions of artificial intelligence, and while definitions varied, a common denominator was the association with efficiency. Across both managers and associates, AI was generally perceived as an assistant or supportive tool, rather than a fully autonomous system.

“Right now it's an assistant, depending on which of the programs you use, but you can... It's a clearly better search engine, I would say. And then that you can use to do certain tasks for you, then as I said, you know, they are not completely reliable yet and it is mixed quality so I would say that you are still in the beta phase with the ones that we use.” – Manager 3

In practice, AI was already integrated into store operations, particularly through camera systems used to monitor customer behavior. Among managers, the most common use of AI involved analyzing customer flow and behavior in order to improve store layout and product placement.

“So we use AI to find out how long do customers stay at each headboard, it could be that we have a headboard where a lot of customers pass by, so that it is a good headboard to expose a brand, but we have a headboard where a lot of people stay more than 2 seconds, then maybe it is a better headboard as customers feel more comfortable to stand still and turn and turn one place in the store and another there is more flow. ” – Manager 1

The manager further on even brought up a robotic project, that would be able to work during the nights to pick goods. However, not all implementations were fully reliable or effective. One manager highlighted ongoing issues with AI-powered surveillance systems, noting that current systems still struggle with accuracy:

“We need to improve our systems, so that the systems themselves. We have a project right now where we have an AI program that checks the cameras for us that sees if customers are stealing and then it somehow calculates if it is likely that the person in question is stealing goods.” – Manager 3

Despite the implementation of AI tools, communication around these projects was limited, particularly toward associates. This lack of information was a shared experience, with several employees unaware of AI's presence or role in their store.

“I didn't even know it was a thing until I actually found out about it and when we put them up and then I didn't even know it had arrived. But there are several stores that have started to use it just to reduce theft and all that.” – Associate 3

A recurring observation among employees was that AI is perceived as something futuristic, rather than a current part of their daily work. The notion of AI remains forward-looking, with several respondents associating it more with potential than present-day reality.

5. Discussion

This section explores the perception and attitude of technological advancements (AI-A) on PS among FLEs, combining insights from both qualitative and quantitative data to address the research question and connect findings to existing literature.

The aim of the discussion is to provide a nuanced and integrated understanding of our research questions by exploring both converging and diverging findings across the quantitative and qualitative data together with previous literature. By highlighting patterns, contradictions, and underlying explanations, the discussion seeks to offer a more complete picture of how perception and attitude AI-A influence psychological safety among frontline employees, and JIs moderating effect. In doing so, it outlines key insights, acknowledges limitations, and reflects on the study's theoretical contributions to the fields of organizational behavior and technology adoption.

Section 6.1, The effect of perceived attitudes technological advancement on FLEs PS, examines how AI-A influences employees' sense of security and interpersonal risk-taking. Section 6.2, The moderating effect of JI on the relationship between AI-A and PS, explores how feelings of JI may intensify negative perceptions of AI-A. The analysis incorporates relevant literature to contextualize these findings and identify key patterns. Finally, Section 6.3, Managerial Implications, offers practical recommendations based on the results, highlighting how organizations can support PS during technological advancement. Together, the sections contribute to a broader understanding of how AI-related change is experienced among FLEs.

5.1 The effect of perception and attitudes of technological advancement on front-line employees psychological safety

In regard to whether, AI-A negatively correlates with PS, the present paper finds supporting evidence for this hypothesis. The analysis revealed a significant negative relationship ($\beta = -0.448, p < .001$), indicating that higher levels of AI-A are associated with lower levels of PS. The adjusted R^2 of 0.192 suggests that AI-A explains a moderate amount of variance in PS.

These findings demonstrate that FLEs perceptions of AI-A have a significant negative impact on their PS. Specifically as FLEs perceive higher levels of AI-A their sense of PS tends to decrease. However, the moderate explanatory power (19.2%) indicates that while AI-A is a significant predictor of PS, other factors not included in this model may also influence FLEs PS. In conclusion, while AI-A is a significant predictor of PS, its explanatory power is relatively moderate.

These findings align with existing research that connects AI with JI and its impact on PS. Kim, Kim, and Lee (2024) suggest that AI adoption can heighten workers' perceptions of JI, and separately, that job insecurity negatively affects employees' PS. This provides a theoretical foundation for establishing a direct link between AI-A and reduced PS, as observed in the current study.

Insights from the interviews suggest that, at present, FLEs do not perceive technological advancements such as AI-A as being actively implemented in their workplace. Their perspective on AI-A is largely future-oriented and speculative, with many viewing it as a potential assistant in daily tasks rather than a current operational tool. This limited presence of AI in the current workflow, alongside employees' speculative view of its impact, echoes findings by Guo et al. (2025), who describe how AI's workplace influence is often anticipated more than directly experienced. While some see the value of AI-A in enhancing efficiency, they regard its role as something that may materialize later rather than being part of their immediate work environment. Additionally, several associates demonstrated limited awareness or understanding of AI-A, including both the systems that may already be in place and the broader capabilities of such technologies. This indicates a gap in communication and knowledge, where the presence and potential of AI-A remain unclear or unnoticed among associates. The observation that a lack of awareness buffers fear is supported by Edmondson (2018), who notes that a psychologically safe climate often hinges on shared understanding and openness. If employees are unaware or not engaged in AI processes, their PS may remain unaffected, as of right now.

The degree of PS is carried out by the dissociation of AI-A among FLEs. Knowledge gap of AI-A could be indicators to why the general degree of PS is high according to the interviews, but also the many risks and errors are part of the daily operations and teamwork is a key part for the store, not as focused on individual responsibility. PS supported by the common

agreement, accepting the possibility of errors and risks, and if occurring being allowed, supported by Edmondson earlier studies (1999).

This may provide insights into the moderate explanatory power (adjusted $R^2 = 0.192$) of AI-A on PS which suggests that AI-A is not a dominant factor influencing PS. The future-oriented perspective, combined with a lack of awareness with current AI-A in the workplace, as revealed in the interviews, likely reduces the perceived relevance of AI-A to FLEs PS in the present. As a result, the impact of AI-A appears more moderate than strong, since FLEs are less psychologically affected by a technology they regard as distant, speculative, or not yet integrated into their immediate work context.

Gao and Zamanpour (2024) argue that the responsible use and effective integration of AI in the workplace not only empowers employees but also creates conditions that are conducive to psychological safety, confidence in decision-making, and productive teamwork. However, the evident knowledge gap identified in this study suggests that organizations may be falling short in leveraging AI responsibly. This limitation may contribute to the observed negative relationship between AI-A and psychological safety.

While associates currently experience a high degree of PS, such as high tolerance for errors and risk taking, the interviews revealed that the potential introduction of AI-A could change this perception. Specifically, the implementation of AI technologies, such as surveillance systems, could introduce new stressors that may challenge the current sense of PS. For example, one manager noted that working in an environment characterized by camaraderie, yet closely monitored by AI, could negatively affect how secure associates feel in their positions, and limit the sense of interpersonal risk taking connecting back to Edmondson (2018). This suggests that even in stable environments, the presence of constant algorithmic surveillance or automated decision-making systems may give rise to uncertainty about how associates are evaluated. However, this is something that is already current in their workplace but never addressed by the associates as stressful. It could be because of the knowledge gap of the AI-A systems already in place and its abilities, not being triggered as a stressor yet for PS although the observation fits with Kim and Kim (2024), discussing how algorithmic systems can increase uncertainty and perceived scrutiny.

5.2 The moderating effect of job insecurity on the relationship between perception and attitude of technological advancements and psychological safety.

Regarding the moderating role of JI on the relationship between AI-A and PS, the analysis revealed a significant moderating effect ($\beta = .214, p < .05$). The positive interaction coefficient indicates that high JI buffers the negative relationship between AI-A and PS. While both AI-A ($\beta = -.420, p < .001$) and JI ($\beta = -.250, p < .05$) individually demonstrate negative effects on PS, their combined effect is less negative than would be expected from their individual contributions alone. This finding suggests that as JI increases, the negative impact of AI-A on PS becomes weaker. In practical terms, FLEs who experience JI appear to have their PS less affected by AI-A compared to FLEs who feel secure in their employment.

Building on previous research, JI has been consistently demonstrated to have a negative impact on PS, (Kim, Kim and Lee, 2024; Jeong, Kim and Lee, 2023; Halbesleben and Bowler, 2007; Bakker and Demerouti, 2007; Maslow, 1943). Drawing on this established relationship, it appears that when employees are experiencing JI, their PS is already relatively low. Consequently, the additional impact of AI-A on their PS is less pronounced compared to employees who feel secure in their positions.

This moderating effect can be understood through the existing psychological conditions of the FLEs. For FLEs with high job security, the introduction of AI-A represents a significant new threat to their PS, resulting in a substantial negative impact. In contrast, for FLEs already experiencing JI, their PS threshold is already compromised, creating a context where AI-A cannot further diminish their PS to the same degree.

While the quantitative results directly addressed the study's research questions, the qualitative findings offered a more nuanced understanding of JI and the potential ways in which AI-A may influence it. The interviews provided valuable insights into FLEs' perceptions of role clarity and job stability. All FLEs expressed a strong sense of JI within their current roles. Even when day-to-day responsibilities shift due to unforeseen circumstances such as colleague absence, there was a shared understanding that tasks remained clearly defined. Additionally, several FLEs described a strong sense of cohesion and familiarity within their teams, sometimes to the extent that it could be challenging for new employees to integrate

into the workplace culture, which was often described as being “like a family.” This could be linked to Jeong, Kim, and Lee (2023), who argue that high PS encourages openness and collaboration. In this case, strong team cohesion and role clarity act as buffers to perceived threats, creating a “safety net” of interpersonal trust even in times of uncertainty.

The qualitative interviews revealed a shared perspective among both managers and associates that AI-A is viewed as a supporting tool rather than a replacement for human labor, providing a more nuanced interpretation of the quantitative findings highlighting another perception of AI-A seen as helpful rather than disruptive. Managers acknowledged that while current systems incorporating AI-A are not yet fully developed or consistently effective, they hold potential for broader application, particularly in operational support functions. Several respondents described AI-A as a significantly improved search engine, enhancing information access and task efficiency. At the same time, both groups noted that earlier AI-related systems had not been well-integrated into other workplaces such as suppliers, which reinforced a sense of limited concern or threat as opposed to job insecurity. Associates, in particular, referred to practical experiences which varied, but some highlighted current limitations in AI-A functionality. This helped cultivate a workplace environment where AI-A was seen as supplementary rather than disruptive. The interviews also suggested that the most effective role for AI-A in retail settings is within structured systems, such as logistics and task management, rather than in direct customer interaction or decision-making. This aligns with the fact that when employees feel that AI tools assist rather than replace them, and that they are supported rather than scrutinized, levels of anxiety tend to decrease (Gao and Zamanpour, 2024).

Furthermore, the retail sector did not appear to be perceived as particularly high-risk in terms of the degree of errors and risk. Common operational mishaps, such as damaged goods or incorrect deliveries, were described as routine and rarely caused concern. These everyday occurrences were normalized as part of the job, indicating a broader culture of tolerance for human error. This may help explain why some associates found it difficult to imagine AI replacing their roles entirely, even if they acknowledged that certain tasks might be affected, since the normalizing small mistakes enhances employee security, further explaining why AI is not yet seen as a major threat (Edmondson, 1999).

However, pilot tests have been conducted with robots capable of picking goods at night, which could reduce the need for staff during morning shifts, as the demand for early-day picking would decrease significantly. Despite this, no respondents expressed any fear of losing their jobs as a result of this development, and it was not something that was actively discussed in the workplace. Vorobeva et al. (2022), highlights that fear tends to rise when employees perceive AI as capable of outperforming them. FLEs did not express such concern, perhaps due to the technology's peripheral or unseen role, again reinforcing the idea of perceived distance.

5.3 Managerial Implications

This study's findings provide important implications for managers who aim to maintain PS among FLEs during technological advancement. The following implications are discussed below:

1. Foster well-being at workplace during times of technological advancements

Technological advancements, particularly AI-A, can significantly impact psychological safety, a construct widely recognized as essential for effective teamwork, innovation, and organizational success. As PS plays such a crucial role in workplace dynamics, organizations must create environments where it is prioritized, allowing employees to express concerns freely without fear of negative consequences. Leaders and organizations must cultivate and safeguard PS, especially during periods of change and technological disruption. Managers should focus on clearly communicating role expectations, providing regular support, and promoting a work environment characterized by genuine collaboration and teamwork. By establishing a culture that embraces inclusion, encourages open feedback, and recognizes employee contributions, organizations can reduce the psychological burden associated with uncertainty and perceived threats from new technologies.

2. Acknowledge different individual perceptions of AI-A.

Frontline employees view AI-A through distinctly varied lenses. Some embrace it as a practical, helpful tool enhancing their daily work. Others see it as highly speculative

and future-oriented, while many simply lack knowledge about AI-A both in terms of its workplace applications and broader capabilities. For organizations to integrate AI-A effectively into the workplace, it's essential to recognize these diverse perspectives and tailor implementation processes accordingly. A one-size-fits-all approach will inevitably fall short when employee perceptions range so widely. Managers should actively engage with their team members to understand individual perceptions, address specific questions, and manage varying expectations regarding AI-A. By adopting a differentiated and responsive approach, they can customize support and communication strategies to address the concerns of different employee groups.

3. Transparent Communication

A knowledge gap has been identified regarding both the presence of AI-A technologies in the workplace and their capabilities. Interviews suggest that many FLEs are unaware of the extent to which such systems are currently implemented or how they may influence daily operations. To address this gap, managers are encouraged to engage in transparent and proactive communication concerning AI-A. This includes clarifying how AI-A is being utilized, specifying which systems are in place, and outlining how these technologies may affect workflows and responsibilities. Transparent communication can help ensure that employees are better informed about technological developments in their work environment. By increasing awareness and reducing ambiguity, such communication may facilitate a more structured and informed transition during periods of technological change.

4. Training for employees

The research shows a clear gap in knowledge and communication, it becomes evident that introducing AI-A in retail workplaces requires more than technical implementation, it demands a strong focus on employee understanding. Transparent communication alone is not sufficient; companies must also invest in targeted training to ensure that all employees, regardless of background, are given equal opportunities to engage with and adapt to technological advancements.

We therefore argue that training should be approached as a process of knowledge transformation, where employees are not only recipients of information but active participants in making sense of technological change. Creating such spaces, both formal (e.g. workshops, manuals) and informal (e.g. peer learning, feedback loops), is a critical managerial responsibility when implementing AI-A in a socially sustainable way.

6. Conclusion

6.1 Summary

This study explored how technological advancements, specifically AI-A, impact psychological safety (PS) among front-line employees (FLEs) in the retail sector, using a mixed-methods approach. The results showed a significant negative relationship between perceived AI-A and PS, indicating that greater awareness of AI-A is associated with lower levels of psychological safety. However, the relationship was moderate, suggesting that additional factors also influence PS.

Qualitative findings revealed that FLEs often view AI-A as a supportive tool, particularly within structured systems like logistics. Most described AI-A as speculative or future-oriented, rather than something actively implemented in their current work environment. This perception, along with a clear knowledge gap about existing AI systems, contributed to a lower sense of threat and may explain the moderate impact on PS.

Job insecurity (JI) was found to moderate the relationship between AI-A and PS. While both AI-A and JI independently lowered PS, FLEs with high levels of JI were less affected by AI-A. This suggests that employees already experiencing insecurity may perceive AI-A as less threatening than those who feel secure in their jobs, for whom AI-A represents a new potential risk.

The theoretical contribution of this study lies in providing a more nuanced understanding of how AI-related changes are experienced by FLEs, influenced by their perceptions, workplace culture, and previous experiences with technological advancements. In periods of

technological change, it is crucial to acknowledge the potential fears at the frontline, as these developments can affect FLEs' PS which in turn may have significant implications for overall organizational success.

6.2 Future Research and Limitations

A potential limitation of this study is the subjective nature of concepts such as job insecurity and psychological safety. These topics can be sensitive to discuss in a workplace context, which may have influenced how openly participants responded. Despite efforts to ensure anonymity, some respondents may have moderated their answers due to social desirability or uncertainty about how their views would be interpreted.

The participant selection process represents a significant limitation, as managers chose which employees participated in interviews. This approach introduces potential selection bias, as managers may have intentionally or unconsciously selected employees who would present favorable perspectives about the organization. Participants might have felt implicit pressure to provide responses aligned with management expectations, even with confidentiality assurances.

Another limitation of the study lies in the inclusion of both store-based and warehouse-based FLEs. Although both fall under the broader classification of “retail”, the nature of daily tasks, organizational dynamics, and level of exposure to technological advancement can differ considerably between these environments. This heterogeneity may limit the accuracy of the results, as combining both groups could hide important differences in how AI-A and PS are perceived and experienced in each setting.

Future research could further explore how to effectively integrate AI-A in the workplace by accounting for variations in FLEs' perceptions of AI-A. This study revealed that FLEs differ considerably in how they view and respond to AI-A. These differing perspectives highlight the importance of a tailored approach to implementation, where managerial strategies are adapted to meet the needs of distinct employee groups. Future research could examine which communication, training, and support strategies most effectively enhance PS across different workplace contexts. Understanding these mechanisms would provide valuable guidance for organizations seeking to manage technological transitions more smoothly and foster greater

employee acceptance of AI-A. By identifying practices that align with the specific needs of diverse employee groups, such research can help ensure that the integration of AI promotes both employee well-being and overall organizational success.

7. References

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8. Appendices

Appendix 1: Survey (English and Swedish)

English Version	Swedish Version
This survey is part of a research project conducted by Minna Gifvas and Josephine Gränse, students at the Stockholm School of Economics. The study examines employee's experience in an evolving technological landscape. The findings will be included in a bachelor's thesis in Retail Management and shared publicly upon completion. The survey consists of several questions and takes approximately 5 minutes to complete. Your participation is highly valued, and all responses will remain anonymous. Thank you for your time and contribution. Information regarding data protection: All information shared in this survey is strictly anonymous and confidential. The thesis based on this survey will not contain any information that could lead to participants being identified. Your employer will not be able to identify you as a participant. Participation in this survey is voluntary and can be canceled at any time. At cancellation of participation, your data will be deleted permanently. All data is stored and managed in a secure way by the Stockholm School of Economics and will be permanently deleted after completion of the project. No personal data will be published. If you want to read more about how the Stockholm School of Economics enforces your rights according to GDPR, please visit https://www.hhs.se/gdpr Please contact Minna Gifvas: 50891@student.hhs.se or Josephine Gränse: 50886@student.hhs.se if you have any	Denna enkät är en del av ett forskningsprojekt som genomförs av Minna Gifvas och Josephine Gränse, studenter vid Handelshögskolan i Stockholm. Studien utforskar hur anställda påverkas av tekniska förändringar på arbetsplatsen. Resultatet kommer att inkluderas i en kandidatuppsats inom Retail Management och delas offentligt efter slutförandet. Enkäten består av ett flertal frågor och tar cirka 5 minuter att genomföra. Ditt deltagande är mycket värdefullt, och alla svar kommer att förbli anonyma. Tack för din tid och ditt bidrag. Information om dataskydd: All information som delas i denna enkät är strikt anonym och konfidentiell. Uppsatsen som baseras på enkäten kommer inte att innehålla någon information som kan leda till att deltagare identifieras. Din arbetsgivare kommer inte att kunna identifiera dig som deltagare. Deltagande i denna enkät är frivilligt och kan avbrytas när som helst. Vid avbrytande av deltagande raderas dina uppgifter permanent. All data lagras och hanteras på ett säkert sätt av Handelshögskolan i Stockholm och kommer att raderas permanent efter projektets slutförande. Ingen personlig data kommer att publiceras. Om du vill läsa mer om hur Handelshögskolan i Stockholm säkerställer dina rättigheter enligt GDPR, vänligen besök https://www.hhs.se/gdpr Hör av er till Minna Gifvas: 50891@student.hhs.se eller Josephine Gränse: 50886@student.hhs.se om du skulle ha några frågor eller funderingar kring projektet.

questions or concerns about the project.	
(GDPR) I have read the information regarding data protection and agree to participate in the study. • Yes, continue to study. • No thanks, I do not want to.	(GDPR) Jag har läst informationen om dataskydd och samtycker till att delta i studien. • Ja, fortsatt till studien. • Nej tack, jag vill inte delta.
What is your role at this workplace? (For example, store associate, store manager, warehouse worker, warehouse manager, etc.)	Vad har du för roll på denna arbetsplats? (Exempelvis butiksmedarbetare, butikschef, lagerarbetare, lagerchef etcc)
(Gender) What gender do you identify with? • Female • Male • Other • Prefer not to say	(Kön) Vilket kön identifierar du dig med? • Kvinna • Man • Annat • Vill inte säga
(Age) What is your age? • 18-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70+	(Ålder) Hur gammal är du? • 18-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70+
(Work duration) How long have you been working at this company? • A few days • A few weeks • A few months • More than a year	(Arbetstid) Hur länge har du arbetat på detta företag/arbetsplats? • Några dagar • Några veckor • Några månader • Mer än ett år

• More than 2 years	• Mer än 2 år
(Workplace size) Estimate how many employees work at this workplace in total (including yourself)? • 2-11 people • 12-20 people • 21-50 people • 51-70 people • 70+ people	(Arbetsplatsens storlek) Ungefär hur många anställda arbetar totalt på denna arbetsplats (inklusive dig själv)? • 2–11 personer • 12-20 personer • 21-50 personer • 51-70 personer • 70+ personer
(Workteam size) Approximately how many employees work in your specific work team or department (including yourself)? • 2-5 people • 6-10 people • 11-20 people • 21-50 people • 50+ people	(Arbetslaget storlek) Ungefär hur många anställda arbetar i ditt specifika arbetslag eller avdelning (inklusive dig själv)? • 2–5 personer • 6–10 personer • 11–20 personer • 21–50 personer • 50+ personer
(Psychological safety) Please rate the extent to which you agree with the following statements (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree 5 = Strongly Agree) • If you make a mistake on this team, it is often held against you. (R) • Members of this team are able to bring up problems and tough issues. • People on this team sometimes reject others for being different. (R)	(Psykologisk trygghet) Betygsätt i vilken utsträckning du håller med om följande påståenden (1 = Håller inte med alls, 2 = Håller inte med, 3 = Neutral, 4 = Överensstämmer 5 = Överensstämmer helt) • Om du begår ett misstag i ditt arbetslag hålls det ofta emot dig (R) • Medlemmar i ditt arbetslag kan samtala om problem och svåra ämnen • Det händer att personer i ditt arbetslag utesluter andra för att de är annorlunda.(R) • Det är tryggt att ta risker i ditt arbetslag.

• It is safe to take a risk on this team. • It is difficult to ask other members of this team for help. (R) • No one on this team would deliberately act in a way that undermines my efforts • Working with members of this team, my unique skills and talents are valued and utilized.	• Det är svårt att be andra medlemmar i ditt arbetslag om hjälp (R) • I ditt arbetslag skulle ingen avsiktligt agera på ett sätt som underminerar dina ansträngningar • Dina unika färdigheter och talanger värdesätts och tas till vara när du arbetar med medlemmar i ditt arbetslag
(Job Insecurity) Please rate the extent to which you agree with the following statements (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree 5 = Strongly Agree) • Chances are, I will soon lose my job. • I am sure I can keep my job (R) • I feel insecure about the future of my job • I think I might lose my job in the near future	(Jobb Osäkerhet) Betygsätt i vilken utsträckning du håller med om följande påståenden (1 = Håller inte med alls, 2 = Håller inte med, 3 = Neutral, 4 = Överensstämmer 5 = Överensstämmer helt) • Det finns en risk att jag snart kommer att förlora arbetet • Jag är säker på att kunna behålla mitt jobb (R) • Jag är osäker om min framtida anställning • Jag tror att jag kan förlora mitt arbete inom den närmaste tiden
(Artificial intelligence) Please rate the extent to which you agree with the following statements (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree 5 = Strongly Agree) • I think many workplace systems will be replaced by artificial intelligence and automation. • What I do now in my job will be replaced by artificial intelligence. • My future in my organization is being threatened by the	(Artificiell intelligens) Betygsätt i vilken utsträckning du håller med om följande påståenden (1 = Håller inte med alls, 2 = Håller inte med, 3 = Neutral, 4 = Överensstämmer 5 = Överensstämmer helt) • Jag tror att många system på arbetsplatser kommer att ersättas av artificiell intelligens och automatisering • Det jag gör nu i mitt jobb kommer att ersättas av artificiell intelligens och automatisering

introduction of artificial intelligence. • My future in my industry is being threatened by the introduction of artificial intelligence.	• Min framtid i min organisation hotas av införandet av artificiell intelligens och automatisering • Min framtid inom min bransch hotas av införandet av artificiell intelligens och automatisering
Do you have any other thoughts or comments about what you just answered in the survey?	Har du några andra tankar eller kommentarer om det du just besvarade i enkäten?
(Control Question) What was this survey about? • Your workplace • Food preferences • Volunteering at work	(Kontrollfråga) Vad handlade denna enkät om? • Din arbetsplats • Matpreferenser • Volontärarbete på jobbet

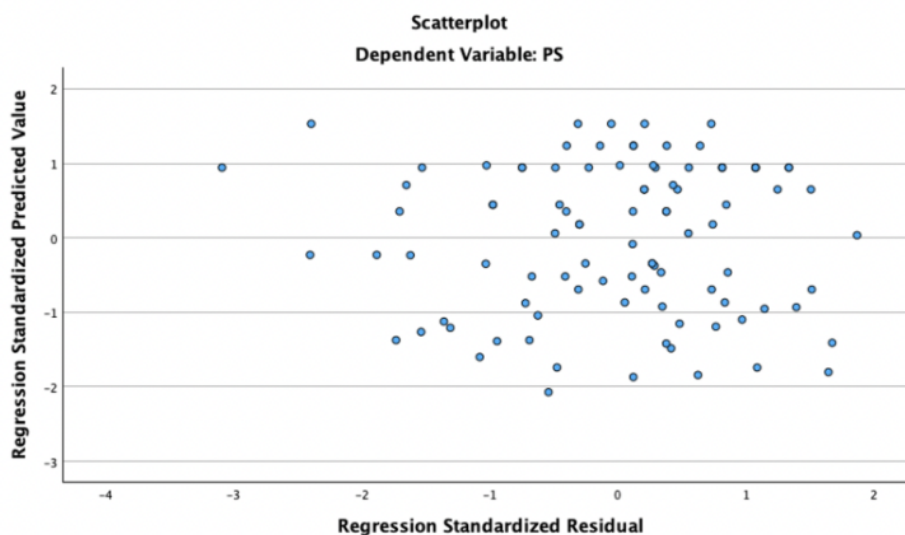
Appendix 2: Interview guide

English	Swedish
Opening questions: • Would you like to start by telling us what your role is in this workplace? • How is the work organized in the store? Do you have separate teams, for example for dairy or fruit and vegetables, or is everyone involved in all departments?	Inledande frågor: • Skulle du vilja börja att berätta vad du har för roll på denna arbetsplats? • Hur är arbetet organiserat i butiken? Har ni uppdelade team, till exempel för mejeri och frukt and grönt, eller är alla medarbetare involverade i alla avdelningar

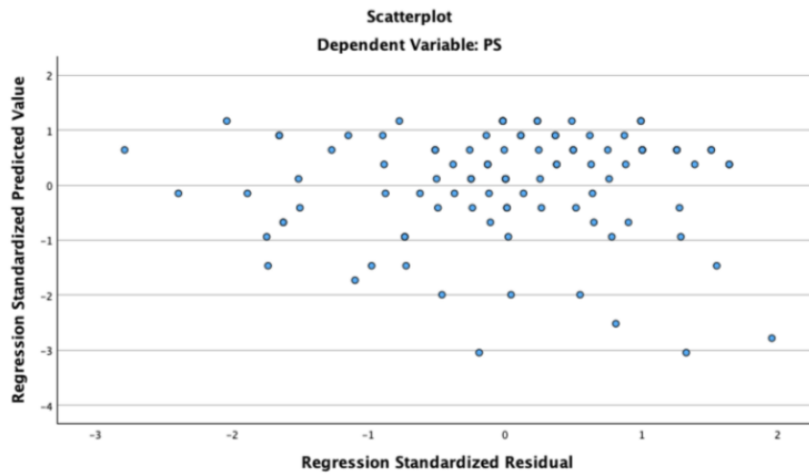
Questions related to psychological safety:	Frågor relaterade till psykologisk trygghet:
• Can you describe how it feels to be part of your work team? • Are there situations where you feel it is difficult to be open about problems or challenges at work? • Can you give an example of a time when you or someone else took a risk at work? How was it received? Individual responsibility? • Do you have any procedures for reporting errors that occur? • How often do errors happen? E.g. dropping fruit on the floor, wrapping the wrong goods	• Kan du beskriva hur det känns att vara en del av ditt arbetslag? • Finns det situationer där du känner att det är svårt att vara öppen med problem eller utmaningar på jobbet? • Kan du ge ett exempel på en gång när du eller någon annan tog en risk på jobbet? Hur togs det emot? Individuellt ansvar? • Har ni några rutiner för hur man rapporterar fel som sker? • Hur ofta sker fel? T.ex att man tappar frukt på golvet, slår in fel varor
Questions related to job insecurity:	Frågor relaterade till job osäkerhet:
• How do you feel about your employment and job security today? • Have you ever worried about losing your job? What has influenced that feeling? • How do you talk about the future and job security in the workplace? • What do you think would be needed to make you feel more secure in your job? • Do you feel it is clear what your job role is and how it might change in the future?	• Hur känner du inför din anställning och tryggheten i ditt jobb idag? • Har du någonsin oroat dig för att förlora ditt arbete? Vad har påverkat den känslan? • Hur pratar ni på arbetsplatsen om framtiden och tryggheten i anställningen? • Vad tror du skulle behövas för att du skulle känna dig mer säker i din anställning? • Känner du att det är tydligt vad din arbetsroll innebär och hur den kan komma att förändras i framtiden?
Questions related to technological advancements (AI-AI):	Frågor relaterade till den tekniska utveckling (AI-A):
• What is AI for you? • How do you see technological developments and AI in your industry?	• Vad är AI för dig? • Hur ser du på teknisk utveckling och AI inom din bransch? Vad tänker du

What do you think about the future? Has AI or automation affected your work so far? If yes, in what way? • Are there tasks in your job that you think could be replaced by AI? How do you feel about it? • Do you feel that AI can make a positive contribution to your work? Is there anything you would like to change or improve with the help of AI? • How do you talk about AI and technological developments in your workplace? Are there concerns or rather curiosity?	om framtiden? • Har AI eller automatisering påverkat ditt arbete hittills? Om ja, på vilket sätt? • Finns det uppgifter i ditt jobb som du tror skulle kunna ersättas av AI? Hur känner du inför det? • Känner du att AI kan bidra positivt till ditt arbete? Finns det något du skulle vilja förändra eller förbättra med hjälp av AI? • Hur pratar ni på arbetsplatsen om AI och teknisk utveckling? Finns det oro eller snarare nyfikenhet?
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Appendix 3: OLS Regression Analysis: Regression residuals visualized using scatterplot



Appendix 4: Moderation Analysis: Regression residuals visualized using scatterplot



Appendix 5: Transcript of Interviews in English Translated

 Interviews - transcript – English

9. Disclosure related to AI use

AI tools were utilized in the completion of this study, primarily to enhance the quality of language and support the translation process. The most prominent tool used was ChatGPT, a generative AI developed by OpenAI (<https://chatgpt.com/>). This tool was employed to refine the language of the thesis, including improving sentence structure and identifying suitable synonyms. While AI-assisted language enhancement was helpful, caution was exercised throughout the process. All suggestions and outputs generated by ChatGPT were carefully reviewed and validated to ensure accuracy and academic integrity.

In addition to ChatGPT, an AI-powered translation service provided by Microsoft Office was used. Since the interviews were conducted in Swedish and needed to be presented in English, this translation tool was used to assist in the process. It is important to note that all interviews were transcribed manually prior to translation. Given that portions of the interview content may be subject to GDPR regulations, the translation service available through Stockholm School of Economics' (SSE) Microsoft Office was chosen to ensure compliance with data protection standards. However, during the translation process, it was observed that the AI occasionally misinterpreted certain Swedish phrases, resulting in minor inaccuracies. To mitigate this, the translated text was systematically compared with the original Swedish transcripts to ensure correctness and preserve the intended meaning.