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Managing Change in the Era of Artificial Intelligence:

The Impact of Communicating Human-Robot Collaboration on Informational Justice and Turnover Intentions

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Abstract

Title: The Impact of Communicating Human-Robot Collaboration on Informational Justice and Turnover Intentions

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The rise of Industry 4.0 is leading to the increasing integration of artificial intelligence (AI) and robots in the workplace, a change often associated with undesired emotional and behavioral responses, such as employee turnover. This study aims to understand how communication from different leadership positions, namely the CEO and the direct supervisor, can influence employee turnover intentions and perceptions of informational justice after being informed about the introduction of AI robot teammates. In addition, this study examines whether the timing of communication has a moderation effect. A quantitative research method was conducted to assess the effects and interactions between the independent and dependent variables using a survey with an experimental research design. The results indicate that informational justice significantly impacts employee turnover intentions. In contrast, no significant relationship was found between the source of communication on turnover intentions and informational justice and no moderation effect of the timing of the communication. However, the timing of communication was found to have a significant impact on informational justice. This study contributes to the growing literature on human-robot collaboration and provides valuable insights on relevant communication factors in organizational change to mitigate employee concerns and turnover intentions in the face of technological advancements.

Keywords: Artificial Intelligence, Humanoid Social Robot, Human-robot Teams, Change Communication, Communication Source, Communication Timing, Informational Justice, Turnover Intentions

Sumário

Título: O Impacto da Comunicação da Liderança acerca da Colaboração entre Humanos e Robôs na Justiça Informacional e nas Intenções de Saída.

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A ascensão da Indústria 4.0 está a levar à crescente integração da inteligência artificial (AI) e dos robôs no local de trabalho, uma mudança frequentemente associada a respostas emocionais e comportamentais indesejadas, como a rotatividade dos funcionários. Este estudo visa compreender como a comunicação por diferentes posições de liderança, nomeadamente o CEO e o supervisor direto, pode influenciar as intenções de saída dos funcionários e as percepções de justiça informacional após serem informados sobre a introdução de colegas de equipa robôs de IA. Para além disso, este estudo analisa se o momento da comunicação tem um efeito moderador. Foi realizado um método de investigação quantitativo para avaliar os efeitos e as interações entre as variáveis independentes e dependentes, utilizando um inquérito com um desenho de investigação experimental. Os resultados indicam que a justiça informativa tem um impacto significativo nas intenções de rotação dos trabalhadores. Em contrapartida, não foi encontrada qualquer relação significativa entre a fonte de comunicação e a justiça informativa na intenção de rotação, nem qualquer efeito moderador do momento da comunicação. No entanto, verificou-se que o momento da comunicação tem um impacto significativo na justiça informativa. Este estudo contribui para a crescente literatura sobre a colaboração entre humanos e robôs e fornece informações valiosas sobre os factores de comunicação relevantes na mudança organizacional para atenuar as preocupações dos trabalhadores e as intenções de rotação face aos avanços tecnológicos.

Palavras-chave: Inteligência Artificial, Robô social humanoide, Equipas humano-robô, Comunicação de mudança, Fonte de comunicação, Tempo de comunicação, Justiça informativa, Intenção de saída

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List of Abbreviations

&	And
AI	Artificial Intelligence
ANOVA	Analysis of Variance
b	Regression coefficient
CEO	Chief Executive Officer
CI	Confidence Interval
df	Degrees of freedom
H	Hypothesis
HRS	Humanoid social robots
HRT	Human-robot teams
M	Sample Mean
N	Total number of cases
p	p-value
r	Pearson correlation coefficient
R ²	Multiple correlation squared
SD	Standard Deviation
SE	Standard Error
t	t-statistics

Model 7 of Hayes PROCESS macro for SPSS

Y	Independent variable
X	Dependent variable
M	Mediator
W	Moderator
XW	Interaction between moderator and mediator

1 Introduction

1.1 Relevance of the Topic

In the last few years, our world has become more and more digital, and this change is happening faster and faster through the new age of Industry 4.0. New technologies like Machine Learning, AI, and the Internet of Things gained importance, and become an integral part of our lives (Kumar et al., 2021). Employees, organizations and the whole society will experience radical changes as a result of these technologies (Ross & Maynard, 2021). According to the Society for Industrial and Organizational Psychology, AI is the top trend in the workplace (SIOP, 2020). In line with this trend, organizations have been implementing AI in their core business, with robotics being part of this. The ongoing developments in this area are leading to increasingly advanced AI robots that become capable team members for employees and are equipped with anthropomorphic features to give them a humanlike appearance. However, the integration of AI robots is often done without considering the employees who will interact and work with them (Makarius et al., 2020; Zhang et al., 2023). There are several reasons for this. On the one hand, human-robot collaboration is a challenging area of research with many different interfaces, such as psychology, computer science, social sciences, engineering, communication and AI. On the other hand, research on human-robot collaboration in the workplace is still very young and further studies are needed to draw concrete conclusions (Dautenhahn, 2007). According to a study of Dell executives on the future of collaboration, 82% expect that humans and machines will work together as integrated teams in the future (Dell Technologies, 2018). As robots are expected to become an integral part of the workforce in the future, the question arises, how does this organizational change affect employees, as such changes are often accompanied by feelings of anxiety and uncertainty about their future (Sinha et al., 2020). These uncertainties and fears are reflected, among other things, in job insecurity and turnover intentions (Nam, 2019). When employees want to leave, there are a number of negative consequences for organizations. Firstly, there are significant costs associated with replacing the employee. Secondly, it is not just the employee who leaves, but also the knowledge and skills they have built up over the years. (Lashley & Chaplain, 1999). To overcome and reduce these obstacles, research has shown that communication plays a crucial role during such an organizational change (Goodman et al., 2016). The introduction of robots is, therefore, not only a technological challenge. It is also a human-related as well as a communication challenge that needs to be taken into account (Berger et al., 2021; Rampersad, 2020).

1.2 Problem Statement and Research Objectives

In order to better understand how communication can influence employee turnover intentions in relation to the introduction of a new AI robot teammate, two key communication factors were selected. The first one is the source of communication. Therefore, two different leadership positions (CEO vs. direct supervisor) were examined in this study. The source of communication was chosen because of the evidence in the literature that leadership and management have a crucial role in organizational change (Gill, 2001). The second relevant factor considered is the timing of the communication, as it is one of the fundamental criteria for effective communication, according to Zaremba (2006, p. 114). This becomes clear in his following quote:

“Receivers must get messages at a time when the information is meaningful. The message is meaningless if it arrives too late” Zaremba (2006, p. 114).

Furthermore, previous research has shown that employees who report receiving timely information about an organizational change have a more favorable view of the change (Wanberg & Banas, 2000). In addition to the link between communication and turnover intentions, the literature has shown that informational justice also plays an important factor in this interaction and in organizational change in general. According to Scott et al. (2007), this important factor is due to the fact that informational justice plays an essential role in how subordinates feel and behave. For this reason, informational justice will be considered and examined for its effects on turnover intention.

However, there has been no research to date on how the communication of the two leadership positions affects employee turnover intentions. In fact, there is little or almost no research that distinguishes between different leadership positions. As an exception, a meta-analysis by Dirks and Ferrin (2002) makes a similar distinction between different leadership positions (direct leader vs. organizational leadership) and examines them for the construct of trust. Nevertheless, most of the literature in this area relates to the organization as a whole or to top managers and how different leadership styles affect turnover intentions. Further studies build up on the leader–member exchange theory (e.g., Harris et al., 2014; Hill et al., 2014; Jordan & Troth, 2011) and examine different outcomes. Therefore, the research conducted in this study is intended to fill a gap in this research area and provide insights for the future on how communication should proceed. Especially as the issue of human-robot collaboration will become more and more important in the future, people, especially management will have to deal with the question of how to successfully communicate it to employees and reduce the associated concerns and fears

of employees in the process. Accordingly, the aim of this study is to find out if and how the source of communication affects turnover intention and informational justice and what role the timing of communication plays in all this.

Based on this, this thesis intends to answer the following research question: *Does the source of communication influence employee turnover intentions and informational justice?*

The main research question is broken down into five sub-questions to address the research gap:

1. *Does CEO communication negatively influence employees' turnover intentions in comparison with direct supervisor communication?*
2. *Does direct supervisor communication increase employee's informational justice more so than CEO communication?*
3. *How does the timing of communication impact informational justice?*
4. *Does the perception of informational justice negatively influence employee turnover intentions?*
5. *Does the perception of informational justice mediate the relationship between the source of communication and turnover intention?*

In order to answer the research questions, a quantitative research method was used. An experimental study was conducted to assess the various effects between the independent variable, the moderator and the mediator variable, and the dependent variable, as well as their relationships to one another. To do so, a range of applications and tools, including Qualtrics, SPSS, PowerPoint and Excel, were used to create, design, and analyze the results. This research aims to contribute to the growing literature on human-robot collaboration and change communication.

1.3 Structure of the Dissertation

The dissertation is divided into six chapters and follows the classic approach of empirical research presentation guidelines. The first chapter serves as an introduction, presenting the relevance of the study, the problem and the research questions, as well as information on the methodological approach. In the following chapter, an overview of the existing literature is given. General information and definitions of AI, change communication, turnover intentions and informational justice are provided in this chapter. The next chapter, three, provides an overview of the methodology used in this dissertation. This includes an explanation of the research design, the sample, the procedure, and the measurement of the variables. Chapter four presents the analysis of the data collected and applies it to the previously defined hypotheses from chapter two. The next chapter, five, contains a discussion that relates the findings of the study to the existing literature. In addition, the theoretical and practical implications and limitations of the study are outlined. Finally, the sixth chapter contains a conclusion that briefly summarizes the findings of this dissertation in order to provide a helpful overview of the research.

2 Literature Review

2.1 Artificial Intelligence in Organizations

Industry 4.0 technologies have become increasingly important as the world has moved more and more toward a digital future in the last few years (Kumar et al., 2021). In this era, AI plays an essential component besides technologies like Blockchain, the Internet of Things, and Cloud Technology. As a result of increasing digitization and the constant need for organizations to change in order to sustain a competitive position, AI is becoming more commonplace across multiple industries (Dirican, 2015; Kim & Kim, 2020). Over the past five years, there has been a significant increase in the use of AI within large organizations. Some form of AI has been incorporated into the core operations of nearly 80% of these organizations (Ghosh et al., 2019). The founding father of the AI concept is John McCarthy, who introduced AI as "the science and engineering of making intelligent machines" at a Dartmouth Summer Research Project on Artificial Intelligence conference in 1956 (McCarthy, 2007, p. 2; Pan, 2016). Building on the foundational work of John McCarthy, the concept of AI has evolved significantly over the years since its inception. Ferràs-Hernández (2018, p. 260) further illuminates the definition of AI as follows:

"AI is formed by a new generation of machines capable of (a) interacting with the environment, gathering information from outside (including from natural language) or from other computer systems; (b) interpreting this information, recognizing patterns, inducing rules, or predicting events; (c) generating results, answering questions; or giving instructions to other systems; and (d) evaluating the results of their actions and improving their decision systems to achieve specific objectives."

According to Brynjolfsson and McAfee (2017), AI is the most important general-purpose technology of our era, and Davenport (2018) outlines that AI may be the force of technology with the most disruptive potential in the world right now. However, there is still a long way to go, even if AI has generated high interest and excitement in terms of improving future conditions, such as better stakeholder engagement, decision support and new innovations through its implementation (Borges et al., 2021). At the same time, there are concerns about data privacy, lack of transparency, biases, as well as the future of work in general. Equally scary seems to be an anticipated lack of social interaction when machines become teammates or the fear when humans are completely replaced by machines (Levy, 2018; Müller & Bostrom, 2016). In addition, integrating AI into the workplace can cause stress among employees, leading to decreased performance and organizational commitment and influencing employees' intentions

to stay or leave the organization (Brougham & Haar, 2018; Li et al., 2019). Accordingly, organizations in the future will be faced with the question of which tasks and which decisions should rather be made by AI or by humans and which ones should be made in collaboration. But above all, how AI and humans can coexist and work together harmoniously (Haenlein & Kaplan, 2019) and how organizations can support their employees in successfully managing and adaptation to this new era (Wang et al., 2017).

2.2 The Rise of Social Robots

The rise of robots and the beginning of human-machine collaboration came with the Industrial Revolution. At this time, collaboration was characterized by humans using technology as inanimate tools. With the development of technology over time, inanimate tools have evolved into highly intelligent robots and machines that communicate and cooperate directly with humans (Gunkel, 2017). Scientists and economists differ on the future development of cooperation between humans and robots. According to Frey and Osborne (2017), robots are expected to replace 47% of human jobs in the next two decades, mainly in manual tasks. This view is also shared by the World Economic Forum, which predicts that by 2025, more than half of all jobs will be replaced by robots (World Economic Forum, 2018). On the other side, there are also more optimistic voices, who believe that the rise of robots will lead to the creation of new jobs and responsibilities for humans. The agreement among scientists, nevertheless, is that robots will play a significant role in numerous areas of life in the coming years (Acemoglu & Restrepo, 2018). This rapid increase in robots is corroborated by data from the International Federation of Robotics. In 2020, they reported that for every 10,000 workers across the globe, there were 113 robots, a figure that is set to rise in the coming years (International Federation of Robotics, 2020). Today, there are many different generations and types of robots that need to be distinguished from each other (Onnasch & Roesler, 2020). With regard to the research purpose and the research object, this study refers to humanoid social robots (HSRs), which can be seen as a particular type of social robots.

HSRs can be defined as “human-made autonomous entities that interact with humans in a humanlike way” (Zhao, 2006, p. 405). The term humanoid implies that social robots should be considered comparable to humans in that they assume or resemble their behavior or form to some level (Fox & Gambino, 2021). In this context, anthropomorphism plays a crucial role, which aims to endow real or imagined robot behaviors with human-like attributes such as traits,

motivations, emotions, and intentions (Epley et al., 2007). In general, people feel more comfortable with anthropomorphized robots, because they get the impression that they have a consciousness of their own (Airenti, 2015). This observation is consistent with the findings of the study by Borau et al. (2021), which showed that people generally prefer interacting with anthropomorphic robots and specifically prefer female robots over male-looking robots, because they perceive them as more human, warmer, and moral, which leads to greater trust and credibility (Borau et al., 2021). To get a better overview of what an HRS looks like, see Figure 1 below.

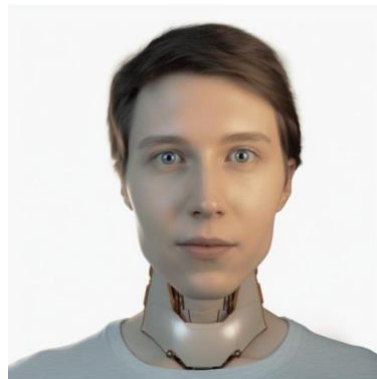


Figure 1: Humanoid Social Robot

In addition to anthropomorphism, HSRs are characterized by AI, programmed interactivity and synthetic emotion and can exist in both physical and digital forms (Zhao, 2006; Fox & Gambino, 2021). This allows them to understand emotions, recognize faces and psychological states, and respond appropriately in a natural way (Yam et al., 2022). HRSs are able to interpret their environment in the context of their own experiences and to learn and develop accordingly (Dautenhahn & Billard, 1999).

Historically, the 1956 Dartmouth Summer Conference on AI can be seen as the origin of the beginning of research and projects on humanoid social robots, which led to the Stanford Research Institute developing the first autonomous humanoid robot in the late 1960s (Zhao, 2006). In the meantime, social robots are already being successfully used in education (Woo et al., 2021), as well as in many service industries, such as hotels, restaurants, and even retail and airline companies, where they act as advisors for customer services (Lu et al., 2019). With these advancements over time, technology has evolved from a tool to a partner, requiring more interaction and collaboration, leading to human-robot teams (HRT; Bankins & Formosa, 2019).

2.3 Human-Robot-Teams

In recent years, there has been a rapidly growing interest in research on HRT and collaboration (McNeese et al., 2018). According to a study from Dell Technologies, that asked executives about the future of collaboration, 82% said they expect to see humans and machines working as integrated teams within the next five years. In addition, 26% said their employees and machines were already working together successfully (Dell Technologies, 2018). Previous research has also provided empirical evidence that HRT can improve performance (McNeese et al., 2018). A remarkable example of how humanoids and humans can work together on a high level is a NASA project, where they created a humanoid robot called Robonaut. Designed to perform tasks both independently and as part of a team, this robot was created specifically to assist astronauts on the space station in performing maintenance tasks, assembling and disassembling workplaces. With articulated arms and hands, Robonaut exhibits a level of dexterity comparable to an astronaut, further enhancing its compatibility for teamwork in this unique environment (Bluethmann et al., 2003; Hoffman & Breazeal, 2004). This potential was demonstrated by another study that examined collaboration between humans and AI in an experiment on factors such as team performance and situational awareness. Different teams (human team vs. human-AI team vs. AI team) were compared. The results showed that human-AI teams outperformed human-teams in terms of performance on the research item situational awareness (McNeese et al., 2021).

A universal definition of HRT does not yet exist, as it is often based on definitions from team research (McNeese et al., 2018). Flathmann et al.'s (2023, p. 3) definition also builds up on this research and describes HRT as “one or more AI teammates working with one or more human teammates interdependently to complete a shared goal” (Flathmann et al., 2023, p. 3). This team composition creates synergy effects that have numerous advantages. On the one hand, the computational capabilities of AI systems can be used, and on the other hand, the unique strengths of human skills can be utilized. As a result, the weaknesses of the other are compensated for, which leads to an increase in team collaboration, resulting in a higher overall performance (Zhang et al., 2021).

Besides these advantages, the implementation of robots has drawbacks as well. The implementation represents a major organizational change, which is an entirely new situation for employees and can accordingly lead to negative emotional reactions as well as influence their well-being (Savela et al., 2021). This emotional reaction in relation to working with robots was investigated in a role-playing experiment. The results showed a lower level of enthusiasm

among humans for collaborating with robots compared to their engagement with human colleagues due to feelings of alienation and unfamiliarity, as well as the lack of social interaction (Savela et al., 2021). Consequently, it is of great importance in such an organizational change to pursue a clear communication towards the employees, as it can be seen as a critical success factor and can mitigate the negative effects described above (Phillips & Klein, 2023). Therefore, the following chapter focuses on organizational change and the related factors of change communication.

2.4 Organizational Change Communication

As a result of rapidly changing times, with the introduction of new technologies like AI Robots, changes in the workforce and a variety of different environmental factors, many organizations need to adapt their business or feel the need to reorganize and change. However, many organizations still struggle to successfully implement major change activities (Burns, 2004). The truth is that most attempts to implement organizational change fail. Studies have shown that between one-third and two-thirds of all major change initiatives fail (Beer & Nohria, 2000; Bibler, 1989). Unsuccessful change efforts are not only expensive for the organization, but can also cause additional negative synergy effects. Thus, organizational culture and commitment, as well as openness to future attempts at change, can suffer as a result (Jimmieson et al., 2004). In order to successfully implement change in an organization, change communication plays a crucial role. Along with implementation, understanding and planning, change communication is one of the four core principles of change management (Goodman et al., 2016). According to Kreps' (1990) definition, organizational communication can be defined "as the process whereby members gather pertinent information about their organization and the changes occurring within it" (Husain, 2013, p. 44). The goals of change communication are primarily related to reaching employees and communicating the entire process from an understandable perspective. Over the years, various communication researchers have defined additional goals that should be considered in the content of the communication. These include communicating a vision, gaining commitment, reducing fear and uncertainty, removing barriers to change, and challenging the status quo (Balagun & Hope, 2003; Carnall, 1997; Klein, 1996; Kotter, 2002). The relevance of communication in relation to desired organizational change has been empirically proven in the academic world and is widely recognized by experts and practitioners. The research evidence illustrates that the process of organizational change and communication are irrevocably interconnected (Lewis, 1999). Various organizational outcomes, including

commitment, performance, and work satisfaction, are positively correlated with communication. Contrarily, a communication failure can have unfavorable effects such as stress, job dissatisfaction, a decline in organizational trust and commitment, turnover intention and absence (Bastien, 1987; Malmelin, 2007).

2.5 The Source of Communication

In addition to communication, leadership is another crucial aspect in fostering openness to change (Khan et al., 2022). While change is a process that moves an organization toward a desired future state by addressing problems that arise along the way, leadership and management play a crucial role in being essential to organizational change (Gill, 2001). The reasons for this are on the one hand, because they are the ones who decide what should be changed and on the other hand, how and when this change should be implemented (Khan et al., 2022).

The existing literature emphasizes the significant role that leaders play in the successful implementation of organizational change. This pivotal role is primarily due to their ongoing and routine interactions with their subordinates (Battilana & Casciaro, 2013). Expanding on this, the Leader-Member Exchange theory, also states that leaders establish a unique social exchange relationship with their employees (Donohue-Porter et al., 2019) and follows the assumption that the leader influences their subordinates through the quality of their relationships with them (Erdogan & Bauer, 2015). In contrast, most employees typically have a limited direct relationship with the CEO, unless the firm is small (Costigan et al., 2011). Gonring (1991) also refers to the supervisor as the most important link in the organization, when it comes to change and says that employees want interpersonal communication and therefore, most of this communication should come from their supervisors.

Therefore, changes should be communicated through direct supervisors, as they are personally familiar with the employees. This enables them to provide tailored, relevant information, because they know the immediate concerns and needs of their team members (Richardson & Denton, 1996). An example that supports these statements is when Chrysler went through a culture change in the 1990's, and the employees of the organization told the management that they preferred to hear about the change from their own supervisors (Richardson & Denton, 1996).

2.6 The Role of Timing within Communication

Another vital factor to consider in change communication is the timing of information delivery. Previous research has shown that timely and practical information about an organizational change can lead to more positive attitudes towards the change, which in turn can lead to greater cooperation (Wanberg & Banas, 2000). This is also supported by the study of Liu and Perrewé (2005), which examined and built on the cognitive-emotional model of organizational change. It implies that information needs to be shared early in the change process, because if employees are given this change information early, they are still in a very adaptive stage where the commitment of the change can still be strongly influenced compared to later stages. In this way, it is possible to change the emotional reactions of employees and create positive attitudes that promote change (Liu & Perrewé, 2005).

A real-world example of how timely communication was critical to successful change occurred in 1994, when Delta Airlines underwent a major change restructuring and suddenly had to lay off thousands of employees, even though the company had no history of layoffs. The Vice President of Corporate Communications pointed out that timely communication is challenging but necessary and that one of the critical success factors in this change was providing employees with as much information as possible, as quickly as possible (Richardson & Denton, 1996). In order for employees to experience a high level of confidence, security, and optimism regarding the organizational change and its subsequent future outcomes, it is essential for them to possess a comprehensive understanding of the change and the underlying reasons behind it (Richardson & Denton, 1996). Timely communication plays a critical role in this process by facilitating the delivery of relevant information to employees. This helps them understand the nature of the change and anticipate its future impact. As a result, this has been shown to lead to an increased sense of control among the employees (Cobb et al., 1995).

2.7 Turnover Intentions

Looking at the past and the history of the last few decades, radical technological changes have transformed many businesses at a rapid pace (Henderson & Clark, 1990; Bower & Christensen, 1995). This rapid dynamic, currently accompanied by the development of AI and robotics, can lead to excessive demands on employees and even trigger fears that are perceived as threatening. These anxieties are primarily expressed in terms of job insecurity and related intentions to turnover (Yam et al., 2023).

In general, turnover intentions can be defined as “an employee’s reported willingness to leave the organization within a defined period of time” (Lazzari et al., 2022, p. 279). Turnover can be distinguished between two different types: voluntary and involuntary. Voluntary turnover describes situations in which an employee makes the decision to leave the organization, while involuntary turnover reflects circumstances in which an employee is terminated by the organization (Holtem et al., 2008). Both types of turnover have a number of negative side effects, including an increased workload for current employees, which can have a negative impact on their work motivation and productivity, as well as a decrease in the overall performance of the organization (Tnay et al., 2013). Another consequence is the cost factor. At best, the departing employee must be replaced, which requires new resources and costs time and money. In addition, there are intangible costs, such as the loss of knowledge, skills, and experience (Lashley & Chaplain, 1999).

To prevent or minimize these negative effects, it is important to understand the reasons for employee turnover. There are numerous reasons, including job satisfaction, communication, perceived organizational support, training, organizational justice, employee benefits and opportunities, job satisfaction, organizational climate, perceived supervisor support and the associated relationship between leader and member (Al-Kahtani, 2015; Gustafson, 2002). Especially the relationship between the manager and the employee has a significant importance when it comes to turnover intention (Kouzes & Posner, 2002). This importance is underscored by the following statement in Kouzes and Posner's book on leadership (Kouzes & Posner, 2002, p. 283):

“A key factor in why people stay in organizations is their managers. It’s equally important in why people leave organizations. People in fact, don’t generally quit companies, they quit managers”

However, no study to date has examined the impact of communication between the CEO and direct supervisor on turnover intentions. Most studies (e.g., Dirks & Ferrin, 2002; Long & Thean, 2011; Wells & Peachey, 2011) have only examined different leadership styles or leadership trust in relation to turnover intention. Nevertheless, they provide important insights that can be applied to this study. One such insight was that trust in the leader leads to higher job satisfaction and a more substantial commitment to the organization, and these factors ultimately result in lower turnover intentions (Dirks & Ferrin, 2002). Building on Dirks and Ferrin’s meta-analysis from 2002, Costigan et al. (2011) conducted a study that compared

turnover intentions between trust in the direct supervisor and trust in the CEO. Correlation results showed that trust in the organization's CEO had a stronger relationship (more negatively correlated) with turnover intentions than trust in the direct supervisor. These findings were found in all three samples (U.S., Polish, and Russian participants). The authors of the study suggest that a lack of trust in the CEO may be more concerning to the employee because it reflects poor future conditions for the organization and, thus, for the employees' own jobs. These results challenge Kouzes and Posner's (2002) statement as it suggests that the importance of the CEO is a stronger determinant of turnover intentions than the direct supervisor (Costigan et al., 2011).

Based on the research findings of Dirks and Ferrin (2002) and the considerations presented, the following hypothesis is proposed:

H1: Communication through CEO will negatively influence employee's turnover intentions in comparison with communication through the direct superior

2.8 Informational Justice

Another crucial factor to consider is how employees receive and perceive the communication of the change. In this sense, informational justice plays a crucial role. Informational justice is one of the four main components of organizational justice, along with distributive justice, procedural justice, and interpersonal justice (Barsky et al., 2011; Bies, 2015; Colquitt, 2001). In the academic world, informational justice and interpersonal justice are also often combined into one component and studied in relation to the other two dimensions. Some researchers (e.g., Bies, 2005; Scott et al. 2007) consider informational and interpersonal justice to be much more important than distributive and procedural justice, because they are of everyday importance and thus have a significant impact on employee's work attitudes and behaviors as well as their job satisfaction (Chueng, 2013; Kernan & Hanges, 2002; Loi et al., 2009; Scott et al., 2007). Since the focus of this study is on communication, this study will refer only to informational justice and will not consider the other dimensions. Therefore, informational justice can be considered as:

“the perceived fairness of how decisions are enacted by organizational communication. Informational justice is fostered by adequate and honest communication” (Kim, 2009, p. 299).

This perceived fairness plays a central role in many work contexts, as a high level of perceived fairness leads to better work performance and greater trust in superiors (Konovsky & Pugh, 1994; Pillai et al., 1999). It must be acknowledged that informational justice was developed as the last area of the justice dimensions. Even the fields of management and psychology, which have done a great deal of work on the idea of organizational justice, have ignored the communication aspects for a while. Nevertheless, scholars believe in the importance of the communicative dimension of organizational management, because almost all facets of organizational behavior involve communication in some way (Kim, 2009).

According to the agent-system model, the source of interactional justice and hence informational justice is the direct supervisor (Bies & Moag, 1986; Malatesta & Byrne, 1997; Moorman, 1991). This is argued because direct supervisors are often the ones who have a close relationship with their subordinates through daily interactions and show them respect and care, which may lead subordinates to reciprocate this goodwill toward the supervisor, ultimately leading to interpersonal fairness (Folger & Cropanzano, 1998; Folger et al., 2005). Additionally, there is a strong connection between interpersonal justice and the norms of a direct supervisor that outline appropriate social behavior like fairness (Fassina et al., 2008). Furthermore, it is easier for employees to blame their direct supervisor for providing inappropriate information and explanations because the direct supervisor is closer to the day-to-day activities than the organization itself or the CEO. In addition, employees can provide direct feedback and communicate with their direct supervisors or accuse them of deliberately withholding information, since they are usually the ones who share information about decisions and organizational changes (Bies, 2005; Folger & Cropanzano, 1998). These arguments showcase the importance of the role of the direct supervisor in terms of informational justice, leading to the following hypothesis:

***H2:** Communication through the direct supervisor will more positively influence employee's informational justice than communication through the CEO*

In addition to the source of communication, it is also important to consider the timing of information delivery as part of effective communication. In a longitudinal study conducted by Bruning et al. (1996), the perceptions of fairness and the outcomes in a restructured organization were examined. The study also looked at communication, and the results showed that there is empirical support for the relationship between effective communication and perceptions of

fairness. In this regard, employee satisfaction with perceptions of fairness, specifically informational justice, is related to the timely, and accurate communication of information from management (Brunning et al., 1996). This is also supported by Greenberg (1993) and Colquitt (2001), who assume that perceptions of informational justice are higher when information is timely and accurate. These results show that effective communication contributes significantly to informational justice. Therefore, this study not only examines the source of communication, but also the role and effect of the timing of communication on informational justice. Therefore, based on the literature and the studies reviewed in the past, the next hypothesis is:

***H3:** The relationship of the source of communication and informational justice is moderated by the timing of the communication, such that an early communication increases the positive effect of the direct supervisor communication on informational justice more so than those of the CEO.*

2.9 Turnover Intentions and Informational Justice

The scientific literature emphasizes the central role of employees' perception of justice and how this perception leads to certain behaviors and reactions within the organization. It has been shown that employees who experience justice are more likely to have lower turnover intentions (Cole et al., 2010). According to Moon's (2017) study findings, when evaluating the four justice dimensions in relation to turnover intentions, all dimensions have an impact on turnover intentions. However, the results suggest that outcome-oriented justice dimensions, such as distributive and interpersonal justice, have a greater impact on turnover intention than the other two justice dimensions, which are more related to general processes (Moon, 2017). Especially interpersonal justice can be considered as the most important dimension when it comes to turnover intentions. This is due to the fact that this dimension is social and personal in nature and defines the exchange relationship between employee and supervisor (Bies & Moag, 1986; Greenberg, 2011). For a deeper look at informational justice, a study conducted by Konovsky and Folger (1991) interviewed 353 laid-off employees about their reactions and management layoff tactics. The results showed that the way management communicated the information about the layoffs, as well as the advance notice of the layoffs, were positively related to employee reactions (Konovsky & Folger, 1991). These findings were similar to those of Brockner et al. (1994), who found that advance announcements and detailed explanations of downsizing were positively related to trust in the company (Brockner et al., 1994). These two findings relate to informational justice and show the importance of fair communication, even

when it comes to major organizational changes such as downsizing or, in this study, the introduction of a new teammate who will be an HRS. The literature has provided evidence that the justice dimensions have an impact on turnover intentions. Based on this and the arguments and results presented in mind, the final hypothesis reads as follows:

H4: *Perceptions of informational justice are negatively related to employees' turnover intentions.*

Furthermore, in light of the preceding information, the following hypothesis is additionally proposed:

H5: *The relationship between the source of communication and turnover intention is mediated by the perception of informational justice.*

2.10 Conceptual Model

A mediated moderation model (see Figure 2) emerges from these five hypotheses. The model aims to understand how two different sources of communication are related to turnover intention and informational justice. In addition, the effects of informational justice as a mediator and the timing of communication as a moderator are examined.

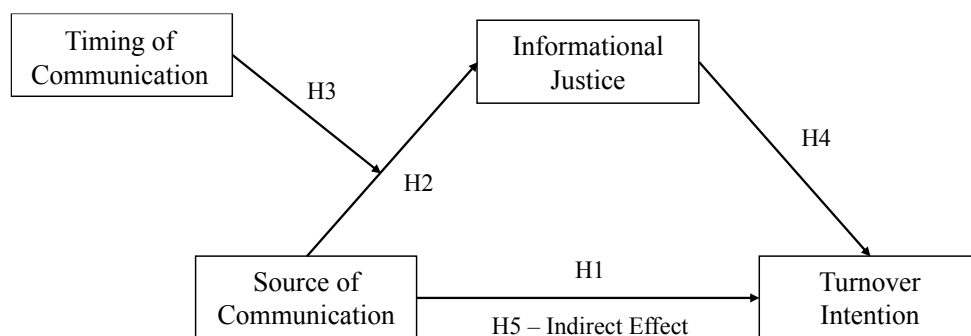


Figure 2: Conceptual Model

3 Methodology

3.1 Research Design

The aim of the study was to test the effect of two different communication sources, an e-mail from the CEO versus an e-mail from the direct supervisor, on employee's turnover intention. In order to do that, a 2x2 factorial design between-subjects study was carried out. This approach was chosen because it is suitable for testing causality in hypothetical scenarios (Malhotra et al., 2017). Here, two variables were used, each with two cells: the source of communication (CEO vs. direct supervisor) and the timing of the communication (one week vs. one year). By combining and crossing these cells, the following four scenarios have been created: 1) CEO and one week, 2) CEO and one year, 3) direct supervisor and one week 4) direct supervisor and one year. In order to measure these scenarios, an online survey using the online survey tool Qualtrics was the study's chosen method of investigation. To make it as realistic as possible, the scenario e-mails were created in Outlook and screenshots of them were included in the survey, as well as a picture of a HRS to give the participants an idea of their new teammate. This HRS was given the name Lyra to create a more personal connection.

The complete scenarios can be found in the Appendix (see Appendix 1). To increase the validity of this study, participants were randomly allocated to one of the four artificial scenarios (Malhotra et al., 2017). After reading the scenario, they had to answer questions regarding turnover intentions, informational justice and demographics.

3.2 Sample

Participants in the study were recruited through the online platform Prolific. Prolific was chosen for its ability to deliver results quickly and reliably. Compared to other crowdsourcing platforms such as Crowdfunder or MTurk, Prolific offers a significant advantage through its ability to pre-screen (Palan & Schitter, 2018). This feature enhances the integrity of the information collected by allowing for a more careful selection process, ensuring that the data is more closely aligned with the research parameters and objectives (Palan & Schitter, 2018). This pre-selection function was also used in this study. On the one hand, the participants had to be from the United Kingdom in order to have mainly native speakers and to minimize cultural differences. On the other hand, a criterion was that the participants were currently employed to better relate to the work scenario. These pre-settings increased the fit of the study with the sample.

In order to determine the required total sample size to evaluate differences between groups by comparing them, the literature suggests a minimum of 30 participants per cell (Van Voorhis & Morgan, 2007). This recommendation was assured and increased to improve statistical power, resulting in a sample of 417 participants conducted between the 3rd and the 4th of August. The average time to complete the survey was 03:43 minutes, and participants were paid £6.13 per hour to take part in the study. However, of these 417 participants, seven were excluded because they were not currently employed, and another 36 were excluded because they did not pass the attention tests or were outliers. Therefore, the final valid sample consists of 374 participants. Given the design of this study, which included four conditions for randomly assigning participants to scenarios, the distribution of participants across conditions was as follows: *n* CEO and one year = 99, *n* CEO and one week = 96 participants, *n* direct supervisor and one year = 90 participants, *n* direct supervisor and one week = 89 participants. The sample was composed of 243 females, 128 males, one participant who identified with a third gender and two who preferred not to disclose their gender identity. They ranged in age from 20 to 76 years ($M = 38.70$, $SD = 10.92$), and the highest level of education from almost half of the participants have a bachelor's degree (44,1%) followed by secondary education (30,5%). In addition, the majority of respondents were working either full-time (70.3%) or part-time (22.5%) when the survey was conducted. 26.7% have been employed by their current employer for more than ten years, 21.4% for more than five years, and 28.1% for between one and three years. It also can be said that the participants understanding of AI is slightly good ($M = 4.52$, $SD = 1.22$). For a comprehensive overview of population statistics, see Appendix 2.

3.3 Procedure

After participants gave consent to participate, the first question was a screening question to ensure that participants were currently employed. This question was intentionally included in addition to the Prolific pre-screening, as the profile information of the participants in Prolific is not always up to date. If the respondent answered "no" to the question, the survey was automatically finished. All other participants then entered their Prolific ID and were presented with one of the four scenarios described before. To ensure that the scenario was read carefully, two attention questions had to be answered afterwards, namely, who the message was from and when the organizational change would take place. The following step included questions about turnover intention. Furthermore, in connection with the review of the communication itself, questions were also asked about informational justice. All of these questions were related to

how much they agreed with the different statements, and two additional attention tests were hidden within these blocks of questions to test for attention. Finally, respondents were asked about their general understanding of AI, followed by demographic questions. These questions covered a variety of aspects such as age, gender, education, employment status, tenure, and other relevant characteristics.

3.4 Variables Measurement

3.4.1 Main Variables

Source of communication (CEO vs. direct supervisor): In the present study, the independent variable was a categorical variable indicating two different sources of communication. The independent variable was manipulated by having the messages in the four scenarios come from two different levels of leadership. Therefore, participants either received an e-mail from the CEO or the direct supervisor. The content of the e-mail was the same for all participants except for the source and timing. The message was about introducing a new teammate who will be an HRS.

Timing of the communication (one week vs. one year): The second categorical variable was added because the literature has shown that the timing of communication plays an important factor in implementing organizational change (Wanberg & Banas, 2000). The variable was manipulated by varying the timing of the introduction of the new teammate in the scenarios. In one case, the introduction would take place in one week and in the other case in one year. The choice of these two specific points in time is based on the goal of examining the impact of extreme differences in the timing of organizational change. By contrasting the short-term situation to the long-term situation, a comparison can be drawn. While a change scheduled for the upcoming week implies urgency and might provoke more intense responses, a year affords participants more transition time, potentially leading to more moderate reactions. Thus, such extreme difference was chosen as it is more likely to lead to differences than smaller timing differences.

Turnover Intentions: In this study, the dependent variable was represented by the participant's intentions to turnover. For the purpose of measurement, an adapted scale based on the Michigan Organizational Assessment Questionnaire (Cammann et al., 1979) was used. Previous research

by Dysvik and Kuvaas (2013) and Ford et al., (2013) has also made use of this scale. Example items of the scale are “I would probably look for a new job”; “I would not see much prospects for the future in this organization.”. With minor changes to the hypothetical scenario, all five items were measured using a seven-point Likert scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*).

Informational Justice: Five items were used to measure informational justice, three of them are based on the work of Shapiro et al. (1994) and the other two on the work of Bies and Moag (1986). The items were slightly modified to better fit the hypothetical scenario. All five items were rated on a seven-point Likert scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*).

3.4.2 Covariables

General demographics: The participant’s general demographics, including age, gender and educational level, were also considered as covariates. Previous research on turnover intentions has shown age, education, and gender to be significantly correlated with them (Carbery et al., 2003; Cotton & Tuttle, 1986; Emiroğlu et al., 2015). Age was measured as an open text question in years and gender and educational level by a single choice question format.

Tenure: Tenure, which refers to the duration of time an employee has been in a job, is used in the literature as an essential variable that influences various attitudes of employees in an organization, including turnover intentions (Maden, 2014). Studies have found that the duration of time in a job is negatively correlated with turnover intentions (e.g., Cotton & Tuttle, 1986; Van Breukelen et al., 2004). The measurement was done by asking for different ranges, such as “less than one year” or “more than five years”.

Understanding of AI: The literature has shown that the use of AI is not useful for an organization if employees do not understand it or cannot work with it (Makarius et al., 2020). Therefore, a general understanding question of AI was included to identify the familiarity and understanding of AI of the participants. A seven-point Likert scale ranging from 1 (*extremely bad*) to 7 (*extremely good*) was used for consistency.

4 Results

4.1 Analysis

The study used IBM SPSS Statistics 28 to perform a comprehensive analysis that included several steps, including statistical analysis and hypothesis testing. First, descriptive statistics were calculated to provide a summarized overview of the data. This was followed by a reliability test using Cronbach's Alpha for all the scales in the data set, ensuring the consistency and reliability of the measurements. Finally, different factorial analyses of variance (ANOVA) and regressions were conducted to test and evaluate the hypotheses. Since the study included four scenarios, the variables "source of communication" and "timing of communication" were converted into two dummy variables to create four different conditions. The dummy variable "source of communication" was coded into 1 = CEO and 2 = direct supervisor, and the other dummy variable, "timing of the communication", was coded into 1 = one year and 2 = one week. These methodological steps were important to provide a solid basis for the research findings.

4.2 Scale Reliability

Prior to performing the analysis, all necessary tests were performed to ensure a valid analysis. Therefore, a reliability analysis was conducted to test the Cronbach alpha of all scales, as this is the most common approach to testing internal consistency (Malhotra et al., 2017). All of the scales used in this experiment have been evaluated in the literature and found to be reliable. The analysis of the turnover intentions scale results in $\alpha = .953$. The result is considered as excellent (George & Mallery, 2003). The second scale, informational justice, had a Cronbach alpha of .769, which is between good and acceptable (George & Mallery, 2003). Consequently, both constructs demonstrated strong internal consistency within their items and are reliable in predicting variables of interest. For more information, see Appendix 3.

4.3 Manipulation Checks

Before running the ANOVAs to test the hypotheses, the following assumptions must be checked. The first assumption is the homogeneity of variances. In order to check homogeneity, a Levene's test was used to test the null hypothesis that there is no difference between the group variances. If the Levene's test is not significant, homogeneous variances can be assumed. The second assumption is that the dependent variable is normally distributed. Therefore, the

distribution of turnover intention was tested for normality using the Kolmogorov-Smirnov test. The third and last assumption is that the groups are independent. This assumption can already be recognized as fulfilled, since the participants were randomly assigned to independent groups (Field, 2009).

The results of the Levene's test showed a non-significant result for turnover intentions, $F(3,370) = .473, p > .05$, as well as for informational justice, $F(3,370) = .064, p > .05$. Therefore, it can be concluded that the variance of the groups is not different and the assumption of homogeneity is fulfilled (Field, 2009).

To meet the second assumption, a Kolmogorov-Smirnov test was used. The result, $D(374) = .001, p < 0.05$ for turnover intention and $D(374) = .001, p < 0.05$ for informational justice, indicates that it is significantly different from a normal distribution (Field, 2009). Since simulation studies have shown that the F -test is typically stable against violations of the assumptions of normality and the sample size is large enough ($n > 30$ per cell), the analysis can proceed (De Beuckelaer, 1996; Shirota & Suzuki, 2014). The detailed calculations and results of the assumption are presented in Appendix 4.

4.4 Hypotheses Testing

For the first hypothesis, it was predicted that communication through the CEO will negatively influence employee's turnover intentions in comparison with communication through the direct superior. In order to test the effects between the variables and thus the hypothesis, a factorial ANOVA was carried out. The source of communication, previously coded as a dummy variable (1 = CEO and 2 = direct supervisor), was the independent variable and turnover intention was the dependent variable. In addition, gender, age, education, tenure and understanding of AI were included in the analysis as covariates. The source of communication did not significantly impact turnover intentions, $F(1, 367) = 0.521, p = .471$, resulting in no support for the first hypothesis. Considering the covariates, the ANOVA results highlighted a significant effect of gender on turnover intentions, $F(1, 367) = 5.92, p = .015$. Further exploration of this effect with an independent samples t-test, ($t(369) = -2.59, p = .010$) revealed that females reported higher turnover intentions ($M = 3.95, SD = 1.51$) than males ($M = 3.53, SD = 1.44$). In addition, the covariate understanding of AI was also significant, $F(1, 367) = 10.560, p = .001$. A post-hoc test was designed to examine which categories of the variable differed. The results indicate that there were no significant statistical differences between any pairs of groups after multiple

tests. This indicates that although there are general differences between the groups, additional data or a larger sample size is needed to determine which specific groups differ.

Hypothesis two proposed that communication through the direct supervisor will more positively influence employee's informational justice than communication through the CEO. Once again, the results showed that in this case, the source of the communication had no significant main effect on informational justice, $F(1, 365) = 0.016, p = .899$. According to the results, there is no support for hypothesis two, so it can be rejected. Regarding the covariates, the variable understanding of AI shows a significant effect on informational justice, $F(1, 365) = 5.07, p = .025$, such that participants with an "extremely good" understanding perceive higher informational justice than those with a "slightly good" and "moderately good" understanding. Besides this, the variable education, was also significant, $F(1, 365) = 10.986, p = .001$, such that the educational level has some influence on informational justice, but most pairwise group differences are not statistically significant. Only the difference between "secondary education" and "master's degree" shows a tendency towards significance ($p = .064$), although it does not reach the significance threshold of 0.5.

Hypothesis three predicted that the relationship of the source of communication and informational justice is moderated by the timing of the communication, such that an early communication increases the positive effect of the direct supervisor communication on informational justice more so than those of the CEO. A two-way ANOVA was conducted to test for the interaction effect. The source of the communication (CEO vs. direct supervisor) and the timing of the communication (one year vs. one week) served as independent variables, and informational justice served as the dependent variable, supplemented by the already known covariates. Results showed no significant interaction effect of source and timing of the communication on informational justice, $F(1,365) = 0.37, p = .543$. However, it is worth pointing out that there is a highly significant main effect of timing on informational justice, $F(1,365) = 27.439, p < .001$. Further exploration of this effect revealed that participants who received the e-mail one year before the implementation of the HRS reported a higher perception of informational justice ($M = 4.64, SD = .93$) than those participants who received the e-mail one week before ($M = 4.12, SD = 1.08$).

Finally, hypothesis four states that perceptions of informational justice are negatively related to employee turnover intentions. In order to test this hypothesis, a regression analysis was carried

out. The linear regression model was significant, $F(1, 372) = 39.50, p < .001$, with an R^2 of .096, accounting for approximately 9.6% of the variance in turnover intentions. There was a moderate negative correlation between perceptions of justice and turnover intentions, with a standardized coefficient beta of $-.310$. The regression equation predicting turnover intentions from perceptions of informational justice was $5.774 - 0.445$. Specifically, for every one-unit increase in perceptions of informational justice, there was a 0.445 unit decrease in turnover intentions. This relationship was statistically significant, $t(372) = -6.285, p < .001$. For more detailed information concerning the analyses, see Appendix 5.

4.5 Moderated Mediation Model

In addition to the ANOVA analyses, Hayes' PROCESS macro for SPSS was used to test for a moderated mediation model. By using a bootstrapping method, the macro relies on regression path analyses to discover moderating and mediating effects (Hayes, 2018). Hayes (2018) presents several models that can be used in the context of moderated mediation models. In this study, the appropriate model for this research is number 7, as moderation takes place on path a (see Figure 3).

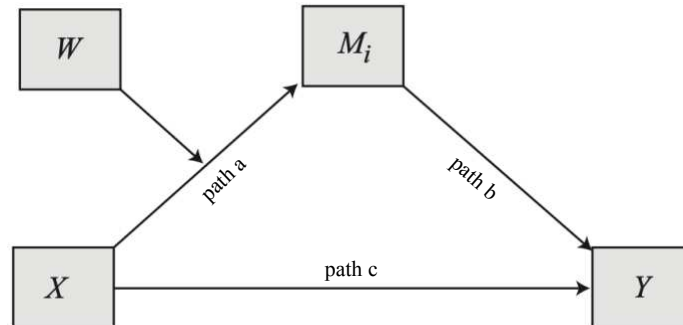


Figure 3: Conceptual Model 7 of Hayes PROCESS macro for SPSS

In this model, turnover intention is the dependent variable (Y), source of communication is the independent variable (X), informational justice is the mediator (M), and timing of communication is the moderator (W). In addition, all previously used covariates were also used here. The following analysis was performed using a 5% significance level and 5,000 bootstrap samples. Two regression sub-models were run to test whether the effects were significant.

In the first sub-model, the outcome variable was informational justice. Therefore, the effect from X to M was investigated, as well as the connected interaction XW. The overall model was

significant ($R^2 = .11$, $F(8,365) = 6.14$, $p = .000$). Furthermore, the results showed no significant effect of the source of communication on informational justice source ($t(8, 365) = 0.61$, $b = 0.20$, $p = .536$). This result leads to no support for hypothesis two. Besides, this the interaction term is also non-significant ($t(8, 365) = -0.60$, $b = -0.12$, $p = .543$), and it can be concluded that there is no evidence for a moderation effect, thus rejecting hypothesis three. When looking at the covariates, two out of the five were significant. The first one is education ($t(8, 365) = -3.31$, $b = -0.19$, $p = .001$), and the second one is the participants understanding of AI ($t(8, 365) = 2.25$, $b = 0.97$, $p = .024$), such that individuals with higher of education perceive lower levels of informational justice and those with a better understanding of AI perceive higher levels of informational justice. In the second sub-model, the outcome variable was the dependent variable turnover intention. This led to the investigation of the effects of paths b and c. The overall model was significant ($R^2 = .15$, $F(7,366) = 9.47$, $p = .000$). The results on path b showed that the relation between informational justice (M) has a negative and significant effect on turnover intentions (Y) ($t(7, 366) = -6.09$, $b = -0.43$, $p = .000$). Thus, hypothesis four is supported that perceptions of informational justice are negatively related to employee turnover intentions. Besides that, the c path results showed a non-significant direct effect between the relation of the source of communication (X) and turnover intention (Y) ($t(7, 366) = 0.79$, $b = 0.11$, $p = .427$), leading to the rejection of hypothesis one. When examining the covariates, two of the five were significant, as in the first sub-model. In this sub-model, gender ($t(7, 366) = 0.44$, $b = 3.04$, $p = .002$) and the participant's understanding of AI ($t(7, 366) = -2.66$, $b = -0.16$, $p = .008$) are the significant ones, such that females showed a higher tendency to leave the organization than males, while participants with a deeper understanding of AI were less likely to express turnover intentions. Furthermore, there are no significant indirect effects whether the moderator takes the value 1 (one year; 95% confidence interval (CI) [-0.15, 0.07]) or 2 (one week; 95% CI [-0.10, 0.16]). Additionally, the index of moderated mediation further suggests its absence ($b = 0.05$, 95% CI [-0.12, 0.24]).

To address hypothesis five and explore the potential mediating role of informational justice in the relationship between source and turnover intentions, model 4 of Hayes was applied. The results suggested that the source of communication did not significantly predict informational justice, $t(1, 372) = -0.10$, $b = 0.00$, $p = .991$. In the second sub-model, informational justice significantly predicted turnover intentions, $t(2, 372) = -6.28$, $b = -0.44$, $p = .000$, while the source of communication did not, $t(2, 372) = 1.01$, $b = 0.15$, $p = .310$. Mediation analysis

indicated that informational justice did not mediate the relationship between the source of communication and turnover intentions, (*CI*) [- 0.09, 0.09]). The entire PROCESS output and the correlation matrix can be found in Appendix 6.

5 Discussion

5.1 Research Findings and Main Conclusions

The aim of this study and the research questions was to find out how the source of communication affects employees' turnover intentions by examining the mediating effect of employees' informational justice. In addition, the moderating effect of the timing of communication was examined to see if and how it impacted the relationship between the source of communication and informational justice. Therefore, a conceptual model was created, which consists of four variables: source of communication, timing of communication, informational justice and turnover intention. Data collection in this study was conducted through four different communication scenarios that differ in terms of the source and the timing of communication. To test the hypothesis, two separate evaluation methods were used to analyze the data, and both methods confirmed each other's results, increasing confidence in the results.

The results of the study did not support hypothesis one, which predicted that communication through the CEO will negatively influence employee's turnover intentions in comparison with communication through the direct superior. Therefore, no direct effect between communication source and turnover intention could be found. This may be due to other variables playing a crucial role, regardless of the hierarchical level of the communication source. These variables could include the content of the message or the relationship to the communication source. In addition, the communication channel may be significant. As the introduction of an HRS represents a major change that can evoke negative emotional and behavioral responses, it may be important for employees to hear about it in a face-to-face conversation, so that they can ask questions and give feedback directly. Similarly, hypothesis two, which predicted that communication through the direct supervisor will more positively influence employee's informational justice than communication through the CEO, was also not supported. These two nulls results establish that the source of communication did not turn out to be a significant variable, as it had no effect on either the employees' turnover intentions or their perception of informational justice.

Taking into account the moderating effect, hypothesis three predicted that the relationship of the source of communication and informational justice is moderated by the timing of the communication, such that an early communication increases the positive effect of the direct supervisor communication on informational justice more so than those of the CEO. This hypothesis was also not supported. It also made no difference whether the moderator took the value 1 (one year) or the value 2 (one week). The indirect effects were both not significant. This may be due to the fact that there may have been individual differences impacting the participants' perception of time. A change within a week might be considered sudden for one person, but appropriate for another. Such variations in the perception of time may have reduced the influence of the timing of communication. Given the sample size of 374 participants, the random assignment method should account statistically for such individual differences, providing a fair basis for comparison between groups and neutralizing the influence of individual bias on the overall results. However, it must be acknowledged, that despite the sample size, the possibility of residual bias due to deeply rooted personal biases in time perception cannot be completely ruled out. Even though the sample size provides a solid basis for the results, individual variations in the perception of the timing of communication could still weaken the observed effects.

In contrast, hypothesis four was supported, which predicted that perceptions of informational justice are negatively related to employees' turnover intentions. The results showed a significant relationship between informational justice and turnover intention. This underlines the importance of informational justice in the context of turnover intention and is in line with previous literature that suggests that perceptions of justice are related to lower turnover intention (Cole et al., 2010). Another significant effect worth mentioning was found between the timing of communication and informational justice. The results showed that early communication, in this case one year in advance, can increase perceptions of informational justice.

To determine the existence of mediation, hypothesis five was tested. Based on the results, there is no significant indirect effect of the source of communication on turnover intentions through informational justice, indicating no mediation effect. However, the model demonstrates that informational justice has a significant impact on turnover intentions. This outcome was predictable, as earlier analyses demonstrated that the source of communication had no

significant effect on informational justice or turnover intention, thereby reducing the likelihood of mediation.

In conclusion, four out of five hypotheses were not supported. In addition to the previously discussed reasons, the following considerations should also be taken into account. A possible explanation for the lack of influence of the source of communication could be the potential overpowering effect of the HRS introduction. This effect may have been so strong and important that it was irrelevant to who communicated the message. The mean value analyses confirm this assumption and can be found in Appendix 7. This could have made other variables less significant, resulting in them being observed only in the background or not at all.

When discussing variables, it is important to note that ignoring related variables such as previous experience with technology or organizational change, job security, job satisfaction, and trust in leadership may have influenced these results. Overall, it may also be that there is simply no significant effect of the communication source on turnover intention and informational justice.

5.2 Theoretical and Managerial Implications

The current study provides implications that are applicable in both academic and management contexts. This is because it has links to many different areas of research, such as communication, AI and robotics, turnover intentions, and leadership research. AI research, in particular, is still a very young field of research compared to other areas. However, it has become increasingly relevant in recent years and research of central relevance in science. Accordingly, one of the aims of this study was to contribute to this emerging area of research and to fill some research gaps. Furthermore, the literature review revealed a lack of research on communication in organizational change. This led to the incentive to link communication in relation to AI and turnover intention and to investigate it in more detail.

The study outcomes demonstrated that informational justice has an effect on turnover intentions, which is in line with previous research (e.g., Cole et al., 2010; Moon, 2017; Konovsky & Folger 1991; Brockner et al., 1994) which has also examined the two constructs in different settings and also found similar results. In addition, the existing literature (e.g., Brunning et al., 1996; Colquitt, 2001; Greenberg, 1993) emphasizes the crucial role that timely

communication can play in leading to positive attitudes to organizational change (Wanberg & Banas, 2000). This study supports this theory by demonstrating the significant influence of the timing of communication on informational justice. Besides this, the study was able to confirm earlier research (e.g., Carbery et al., 2003; Karatepe et al., 2006; Uludağ et al., 2011), that gender is a significant factor of turnover intention. The results coincided with the study by Emiroğlu et al. (2015), that females have a higher turnover intention than males. These facts increase confidence in the findings of this study and supports the existing literature.

In addition to confirming the existing research, the literature was also extended as the two constructs were examined in a new framework, as the introduction of an HRS has not been previously considered in this context. In this regard, a further implication can be drawn from the results that the source of communication does not influence employees' turnover intentions or informational justice. These findings challenge several studies. Gonring (1991) describes the direct supervisor as the most important link in the organization and that employees want interpersonal communication, therefore, communication should come from the direct supervisor. Likewise, Kouzes and Posner (2002) underline the importance of direct supervisor influence in relation to employee's turnover intentions and that they are the reason why employees stay or leave the organization. In addition and according to the agent-system model, the origin of informational justice is the direct supervisor (Bies & Moag, 1986; Malatesta & Byrne, 1997; Moorman, 1991) as they are the ones who have a close relationship with their subordinates through daily interactions (Folger & Cropanzano, 1998; Folger et al., 2005). However, this study's results do not indicate any evidence to support the view that the direct supervisor is more important than the CEO in terms of communicating organizational change, or vice versa. Thus, the results represent a valuable contribution to a novel research area despite the absence of a significant effect. According to science, non-significant results should be published to avoid publication bias (Dickersin & Min, 1993). These results can be used as a basis for future research by investigating it with other variables or in other research settings or to develop a theoretical framework for communication strategies in the context of organizational change.

Practical implications can also be drawn from this study, especially for organizations and management who are considering the implementation of HRS in the future. A key management concern in organizational change is whether employees will accept the proposed change and

how it will be received by employees. The study was able to support that informational justice has a negative effect on employee's turnover intentions after an announced organizational change. This led to the first managerial implication that management should be aware of the importance of fair communication. For this reason, managers should ensure that communication is transparent, timely and fair. Another implication is the suggestion to provide education and training. In view of the significant effect of understanding AI on turnover intentions and informational justice, organizations should invest in training and development programmes to improve the AI knowledge of their employees. This can not only reduce fears and concerns and build trust in the new technology, but also enhance efficiency and productivity. The next implication relates to the empowerment of direct supervisors. As the study did not reveal any significant difference in turnover intention based on the communication source, it may be beneficial for organizations to empower direct supervisors to communicate important information. This would reduce the length of communication processes, allow communication to be tailored more specifically to the direct supervisor's team and clarify questions and concerns that arise more quickly. Finally, the study seeks to encourage every manager to consider the implementation of an HRS, as the literature review has shown that robots can effectively complement human teams.

While these implications provide guidance for organizations and managers, it is crucial that these findings are verified through repeated research and studies. The efficiency and applicability of these management approaches would be reinforced by replicating these findings in various corporate settings and with diverse employee demographics.

5.3 Limitations and Future Research

The following section discusses the limitations encountered during the study. Furthermore, suggestions for future research topics are provided, which could be explored in this area of research.

Firstly, the methodology implemented in this study will be addressed. It should be noted that an experimental research design was employed, wherein various hypothetical scenarios were imagined and used. This technique implies that the environment was artificially created and consequently not as realistic and optimal as in a real-life scenario. Accordingly, it would be interesting to know how the results in the applied scenario would turn out if the whole scenario were carried out in a real organization. This appeal also arises because the source of

communication in this study was unable to demonstrate any effects on the outcome variables. However, this could change if employees would know the source of communication personally, because they work with the person on a daily basis and, therefore, have a clear reference. Looking at the long-term view, it would also be interesting to determine whether employees' intentions to leave the organization translate into actual turnover after the implementation of an HRS or whether collaboration changes their turnover intentions and what factors are driving this change. With regard to the measurement, established and validated scales from previous research studies were used and adapted to the corresponding hypothetical scenario. This adaptation may have led to biases that affected the validity of the measurement.

A further limitation that needs to be addressed is that the sample consists only of participants living in the United Kingdom, which limits the generalization of the results globally. Moreover the findings indicated that the sample had a greater representation of females and individuals with a Bachelor's degree. This imbalance in the demographic characteristics may have influenced the results. It is therefore suggested that the impact on the variables should be analyzed alongside other demographic aspects of the sample, especially culture, in order to measure the degree of variation in these results across different countries and regions.

It is also recommended that future researchers conduct qualitative research on the factors that are important to employees in change communication concerning AI implementation. This can provide deeper insights into how to tailor the content of the message or the timing to employees. This would provide an in-depth understanding of how to tailor the communication in terms of timing, content and source to the employees, for example.

A brief reference to the academic literature used in this dissertation will also be made at this point. As mentioned earlier, there is currently little to no research that examines the impact of different sources of communication in relation to AI. This was one of the reasons why this study chose to address this issue. However, this also means that it was difficult to find enough scientific information to derive the hypotheses. Therefore, this study suggests that future research should look at other communication characteristics in addition to the source and timing of the communication. These could include the channel of communication, whether such an organizational change should rather be communicated in person or by e-mail as in this case and what the effects of this would be. In addition, the content of the message could also be

examined, for example, whether a more fact-based message has a greater effect on the applied variables than a more empathetic, emotional message or vice versa. Through the research conducted in this study, additional variables have emerged as relevant to turnover intention that could be used as mediators or moderators. Examples of these variables are psychological safety, job satisfaction, job security, trust in leadership, organizational justice, and perceived supervisor support, which are variables related to organizational change and turnover intentions that should also be considered and investigated in future studies.

6 Conclusion

AI is becoming increasingly important, and organizations can no longer avoid dealing with it in order to remain competitive in the market. The related implementation of HRSs, which will complement and work directly with human teams in the future, is often associated with uncertainties and fears on the employee side, leading to turnover intentions. Based on this and considering the communication of such organizational change, this study developed a conceptual model with four variables: source of communication, informational justice, turnover intention and timing of the communication. The data was collected through a survey in which four different scenarios were created. This study was able to answer the defined research questions and show that informational justice has a significant impact on the reduction of employee turnover intentions. Additionally, this study did not provide evidence of any effect of the source of communication on turnover intention or informational justice. In light of these findings, organizations must prioritize informational justice in their change communications and be mindful of designing and managing communication appropriately. Moreover, the study invites further exploration in the emerging field of AI and calls for future research to explore other variables and settings, thereby facilitating a richer understanding of the dynamics of organizational change. In summary, the research shows the importance of high standards of informational justice. Accordingly, organizations are urged to focus less on who communicates and more on how communication is designed and perceived.

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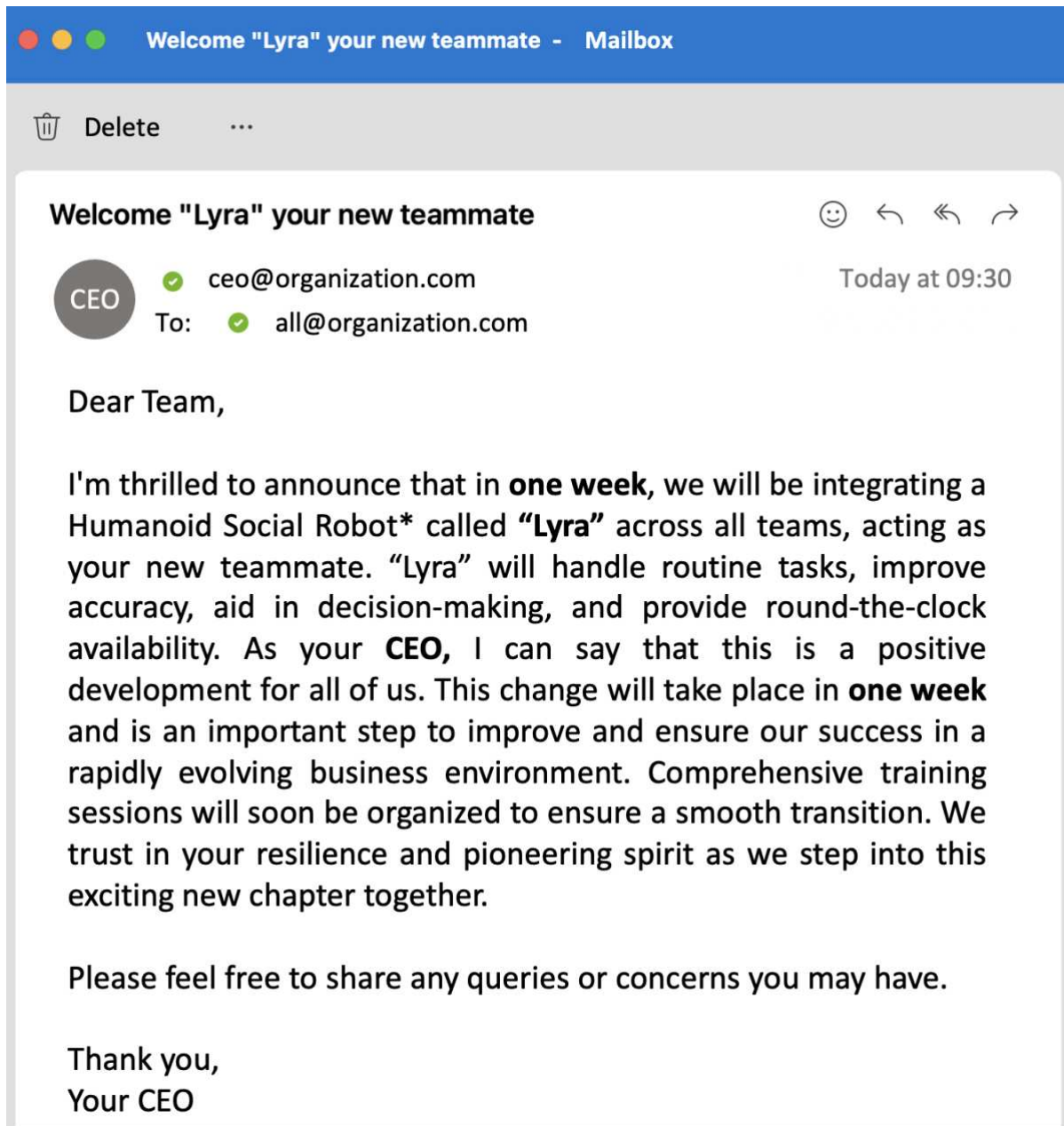
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Appendix

Appendix 1: Scenarios



The image shows a screenshot of an email client interface. At the top, a blue header bar contains the text "Welcome 'Lyra' your new teammate - Mailbox". Below this, a grey bar contains a trash icon and the word "Delete". The main content area is white and contains the following text:

Welcome "Lyra" your new teammate 😊 ↶ ↷ ↸

CEO ✔ ceo@organization.com Today at 09:30

To: ✔ all@organization.com

Dear Team,

I'm thrilled to announce that in **one week**, we will be integrating a Humanoid Social Robot* called "**Lyra**" across all teams, acting as your new teammate. "Lyra" will handle routine tasks, improve accuracy, aid in decision-making, and provide round-the-clock availability. As your **CEO**, I can say that this is a positive development for all of us. This change will take place in **one week** and is an important step to improve and ensure our success in a rapidly evolving business environment. Comprehensive training sessions will soon be organized to ensure a smooth transition. We trust in your resilience and pioneering spirit as we step into this exciting new chapter together.

Please feel free to share any queries or concerns you may have.

Thank you,
Your CEO

Delete ...

Welcome "Lyra" your new teammate



✓ ceo@organization.com

Today at 09:30

To: ✓ all@organization.com

Dear Team,

I'm thrilled to announce that in **one year**, we will be integrating a Humanoid-Social Robot* called "**Lyra**" across all teams, acting as your new teammate. "Lyra" will handle routine tasks, improve accuracy, aid in decision-making, and provide round-the-clock availability. As your **CEO**, I can say that this is a positive development for all of us. This change will take place in **one year** and is an important step to improve and ensure our success in a rapidly evolving business environment. Comprehensive training sessions will soon be organized to ensure a smooth transition. We trust in your resilience and pioneering spirit as we step into this exciting new chapter together.

Please feel free to share any queries or concerns you may have.

Thank you,
Your CEO

Delete ...

Welcome "Lyra" your new teammate

😊 ↶ ↷ ↸



directsupervisor@organization.com

Today at 09:30

To: team@organization.com

Dear Team,

I'm thrilled to announce that in **one week**, we will be integrating a Humanoid-Social Robot* called "**Lyra**" across all teams, acting as your new teammate. "**Lyra**" will handle routine tasks, improve accuracy, aid in decision-making, and provide round-the-clock availability. As your **direct supervisor**, I can say that this is a positive development for all of us. This change will take place in **one week** and is an important step to improve and ensure our success in a rapidly evolving business environment. Comprehensive training sessions will soon be organized to ensure a smooth transition. We trust in your resilience and pioneering spirit as we step into this exciting new chapter together.

Please feel free to share any queries or concerns you may have.

Thank you,
Your direct supervisor

Delete ...

Welcome "Lyra" your new teammate

😊 ↶ ↷ ↸



directsupervisor@organization.com

Today at 09:30

To: team@organization.com

Dear Team,

I'm thrilled to announce that in **one year**, we will be integrating a Humanoid-Social Robot* called "**Lyra**" across all teams, acting as your new teammate. "**Lyra**" will handle routine tasks, improve accuracy, aid in decision-making, and provide round-the-clock availability. As your **direct supervisor**, I can say that this is a positive development for all of us. This change will take place in **one year** and is an important step to improve and ensure our success in a rapidly evolving business environment. Comprehensive training sessions will soon be organized to ensure a smooth transition. We trust in your resilience and pioneering spirit as we step into this exciting new chapter together.

Please feel free to share any queries or concerns you may have.

Thank you,
Your direct supervisor

Appendix 2: Sample Demographics

What is your gender?

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	128	34,2	34,2	34,2
Female	243	65	65	99,2
Non-binary / third gender	1	0,3	0,3	99,5
Prefer not to say	2	0,5	0,5	100
Total	374	100	100	

What is your age?

	Frequency	Percent	Valid Percent	Cumulative Percent
20	3	0,8	0,8	0,8
22	2	0,5	0,5	1,3
23	7	1,9	1,9	3,2
24	11	2,9	2,9	6,1
25	9	2,4	2,4	8,6
26	4	1,1	1,1	9,6
27	15	4	4	13,6
28	13	3,5	3,5	17,1
29	16	4,3	4,3	21,4
30	15	4	4	25,4
31	17	4,5	4,5	29,9
32	16	4,3	4,3	34,2
33	19	5,1	5,1	39,3
34	19	5,1	5,1	44,4
35	14	3,7	3,7	48,1
36	13	3,5	3,5	51,6
37	7	1,9	1,9	53,5
38	13	3,5	3,5	57

39	12	3,2	3,2	60,2
40	12	3,2	3,2	63,4
41	13	3,5	3,5	66,8
42	8	2,1	2,1	69
43	3	0,8	0,8	69,8
44	11	2,9	2,9	72,7
45	2	0,5	0,5	73,3
46	8	2,1	2,1	75,4
47	6	1,6	1,6	77
48	5	1,3	1,3	78,3
49	10	2,7	2,7	81
50	5	1,3	1,3	82,4
51	6	1,6	1,6	84
52	2	0,5	0,5	84,5
53	10	2,7	2,7	87,2
54	8	2,1	2,1	89,3
55	6	1,6	1,6	90,9
56	4	1,1	1,1	92
57	6	1,6	1,6	93,6
58	5	1,3	1,3	94,9
59	2	0,5	0,5	95,5
60	4	1,1	1,1	96,5
61	2	0,5	0,5	97,1
62	4	1,1	1,1	98,1
63	1	0,3	0,3	98,4
64	1	0,3	0,3	98,7
66	2	0,5	0,5	99,2
67	1	0,3	0,3	99,5
71	1	0,3	0,3	99,7
76	1	0,3	0,3	100
Total	374	100	100	

What is your highest level of education?

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than secondary education	2	0,5	0,5	0,5
Secondary education	114	30,5	30,5	31
Bachelor's degree	165	44,1	44,1	75,1
Master's degree	76	20,3	20,3	95,5
Doctoral degree	12	3,2	3,2	98,7
Other (please specify)	5	1,3	1,3	100
Total	374	100	100	

What is your current employment status?

	Frequency	Percent	Valid Percent	Cumulative Percent
Full-time employee	263	70,3	70,3	70,3
Part-time employee	84	22,5	22,5	92,8
Self-employed	19	5,1	5,1	97,9
Working student	5	1,3	1,3	99,2
Other	3	0,8	0,8	100
Total	374	100	100	

How long have you been employed by your current employer?

	Frequency	Percent	Valid Percent	Cumulative Percent
less than 1 year	50	13,4	13,4	13,4
1 -3 years	105	28,1	28,1	41,4
more than 3 years	39	10,4	10,4	51,9
more than 5 years	80	21,4	21,4	73,3
more than 10 years	100	26,7	26,7	100
Total	374	100	100	

How would you rate your understanding of Artificial Intelligence?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely bad	6	1,6	1,6	1,6
	Moderately bad	23	6,1	6,1	7,8
	Slightly bad	46	12,3	12,3	20,1
	Neither good nor bad	73	19,5	19,5	39,6
	Slightly good	150	40,1	40,1	79,7
	Moderately good	74	19,8	19,8	99,5
	Extremely good	2	,5	,5	100,0
	Total	374	100,0	100,0	

Appendix 3: Reliability Analysis

Construct	N of Items	Cronbach's Alpha	Item	Cronbach's Alpha if Item Deleted
Turnover Intention	5	0,953	I would probably look for a new job.	0,936
			I might quit my present job.	0,942
			I would likely actively look for a new job.	0,937
			I would often think about quitting my present job.	0,944
			I would not see much prospects for the future in this organization.	0,953
Informational Justice	5	0,769	The sender of the message has been candid in his communications with you.	0,778
			The sender of the message has explained the procedures thoroughly.	0,676
			The explanations of the sender of the message regarding the procedures were reasonable.	0,681
			The sender of the message has communicated details in a timely manner.	0,768
			The sender of the message has seemed to tailor his communications to individuals' specific needs.	0,723

Appendix 4: Assumption Checks

Levene's Test of Equality of Error Variances

		Levene Statistic	df1	df2	Sig.
Turnover	Based on Mean	0,839	3	370	0,473
	Based on Median	0,816	3	370	0,486
Intention	Based on Median	0,816	3	368,651	0,486
	Based on Median	0,845	3	370	0,47
<hr/>					
Informational	Based on Mean	2,442	3	370	0,064
	Based on Median	2,4	3	370	0,068
Justice	Based on Median	2,4	3	361,527	0,068
	Based on Median	2,38	3	370	0,069

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Turnover	0,073	374	<,001	0,978	374	<,001
Intention						
<hr/>						
Informational	0,073	374	<,001	0,991	374	0,019
Justice						

a. Lilliefors Significance Correction

Appendix 5: Hypothesis Analysis

ANOVA: Turnover Intention

Tests of Between-Subjects Effects

Dependent Variable: Turnover Intention

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	56,708 ^a	6	9,451	4,418	<,001
Intercept	125,325	1	125,325	58,579	<,001
Age	4,794	1	4,794	2,241	,135
Gender	12,657	1	12,657	5,916	,015
Educ	,212	1	,212	,099	,753
Tenure	1,379	1	1,379	,645	,423
UnderAI	22,592	1	22,592	10,560	,001
Source	1,114	1	1,114	,521	,471
Error	785,169	367	2,139		
Total	6301,880	374			
Corrected Total	841,877	373			

a. R Squared = ,067 (Adjusted R Squared = ,052)

ANOVA: Informational Justice Interaction

Tests of Between-Subjects Effects

Dependent Variable: Informational Justice

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	48,400 ^a	8	6,050	6,143	<,001

Intercept	94,028	1	94,028	95,478	<,001
Age	,187	1	,187	,190	,663
Gender	2,090	1	2,090	2,122	,146
Educ	10,820	1	10,820	10,986	,001
Tenure	1,276	1	1,276	1,296	,256
UnderAI	4,993	1	4,993	5,070	,025
Source	,016	1	,016	,016	,899
Timing	27,023	1	27,023	27,439	<,001
Source * Timing	,365	1	,365	,370	,543
Error	359,458	365	,985		
Total	7606,320	374			
Corrected Total	407,858	373			

a. R Squared = ,119 (Adjusted R Squared = ,099)

Independent Samples Test

Group Statistics

What is your gender?		N	Mean	Std. Deviation	Std. Error Mean
Turnover	Male	128	3,5313	1,44341	,12758
	Female	243	3,9523	1,51140	,09696

Independent Samples Test

		Levene's Test for Equality		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
Turnover	Equal variances assumed	0,100	0,752	-2,590	369	0,005	0,010	-0,42101	0,16255	-0,74065	-0,10138
	Equal variances not assumed			-2,627	268,974	0,005	0,009	-0,42101	0,16024	-0,73650	-0,10553

Linear Regression:

Model Summary^b

Model	R	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,310 ^a	,096	1,43035	2,021

a. Predictors: (Constant), Justice

b. Dependent Variable: Turnover

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80,804	1	80,804	39,496	<,001 ^b
	Residual	761,073	372	2,046		
	Total	841,877	373			

a. Dependent Variable: Turnover

b. Predictors: (Constant), Justice

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.	Collinearity Statistics	
		B	Std. Error	Beta	t		Tolerance	VIF
1	(Constant)	5,774	,319		18,076	<,001		
	Justice	-,445	,071	-,310	-6,285	<,001	1,000	1,000

a. Dependent Variable: Turnover

Group Statistics

	Timing	N	Mean	Std. Deviation	Std. Error Mean
Justice	1 Year	189	4,6466	,93692	,06815
	1 Week	185	4,1222	1,08628	,07986

Appendix 6: Hayes PROCESS macro and Correlation Matrix

Model 7: Moderated Mediation Analysis

```
Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 *****

      Written by Andrew F. Hayes, Ph.D.      www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

*****

Model   : 7
  Y     : Turnover
  X     : Source
  M     : Justice
  W     : Timing

Covariates:
  Gender   Age      Educ      Tenure   UnderAI

Sample
Size: 374

*****
OUTCOME VARIABLE:
  Justice

Model Summary
      R      R-sq      MSE      F      df1      df2      p
,3445  ,1187  ,9848  6,1433  8,0000  365,0000  ,0000

Model
      coeff      se      t      p      LLCI      ULCI
constant  4,5681  ,6760  6,7571  ,0000  3,2387  5,8976
Source    ,2025  ,3274  ,6184  ,5367  -,4414  ,8463
Timing   -,3549  ,3236 -1,0967  ,2735  -,9912  ,2814
Int_1    -,1262  ,2074  -,6087  ,5431  -,5340  ,2815
Gender    ,1502  ,1031  1,4567  ,1461  -,0526  ,3529
Age       ,0023  ,0053  ,4362  ,6630  -,0081  ,0128
Educ     -,1994  ,0602 -3,3146  ,0010  -,3177  -,0811
Tenure    ,0458  ,0402  1,1383  ,2558  -,0333  ,1249
UnderAI   ,0970  ,0431  2,2517  ,0249  ,0123  ,1818

Product terms key:
  Int_1      :      Source   x      Timing

Test(s) of highest order unconditional interaction(s):
      R2-chng      F      df1      df2      p
X*W      ,0009      ,3705      1,0000      365,0000      ,5431

*****
```

OUTCOME VARIABLE:

Turnover

Model Summary

R	R-sq	MSE	F	df1	df2	p
,3916	,1534	1,9474	9,4714	7,0000	366,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	6,1429	,6852	8,9646	,0000	4,7954	7,4904
Source	,1158	,1458	,7941	,4277	-,1710	,4026
Justice	-,4328	,0710	-6,0976	,0000	-,5723	-,2932
Gender	,4431	,1453	3,0488	,0025	,1573	,7289
Age	-,0090	,0074	-1,2138	,2256	-,0236	,0056
Educ	-,0486	,0848	-,5727	,5672	-,2153	,1182
Tenure	-,0336	,0563	-,5961	,5515	-,1444	,0772
UnderAI	-,1624	,0610	-2,6643	,0081	-,2823	-,0425

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,1158	,1458	,7941	,4277	-,1710	,4026

Conditional indirect effects of X on Y:

INDIRECT EFFECT:

Source -> Justice -> Turnover

Timing	Effect	BootSE	BootLLCI	BootULCI
1,0000	-,0330	,0594	-,1561	,0787
2,0000	,0216	,0693	-,1130	,1650

Index of moderated mediation (difference between conditional indirect effects):

	Index	BootSE	BootLLCI	BootULCI
Timing	,0546	,0934	-,1204	,2505

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

----- END MATRIX -----

Model 4: Mediation Analysis

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 4
 Y : Turnover
 X : Source
 M : Justice

Sample
 Size: 374

OUTCOME VARIABLE:
 Justice

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,0005	,0000	1,0964	,0001	1,0000	372,0000	,9919

Model

	coeff	se	t	p	LLCI	ULCI
constant	4,3888	,1692	25,9446	,0000	4,0562	4,7214
Source	-,0011	,1084	-,0102	,9919	-,2142	,2120

OUTCOME VARIABLE:
 Turnover

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,3138	,0985	2,0457	20,2643	2,0000	371,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	5,5513	,3873	14,3332	,0000	4,7897	6,3129
Source	,1502	,1481	1,0147	,3109	-,1409	,4414
Justice	-,4451	,0708	-6,2843	,0000	-,5843	-,3058

Test(s) of X by M interaction:

	F	df1	df2	p
	,0592	1,0000	370,0000	,8079

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,1502	,1481	1,0147	,3109	-,1409	,4414

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Justice	,0005	,0486	-,0948	,0964

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

----- END MATRIX -----

Correlation Matrix

		Turnover	Justice	Gender	Age	Education	UnderAI	Tenure
Turnover	Pearson Correlation	1	-,310**	,161**	-,106*	0,032	-,188**	-0,098
	Sig. (2-tailed)		<,001	0,002	0,041	0,542	<,001	0,059
	N	374	374	374	374	374	374	374
Justice	Pearson Correlation	-,310**	1	0,062	,103*	-,167**	0,096	0,097
	Sig. (2-tailed)	<,001		0,235	0,047	0,001	0,062	0,06
	N	374	374	374	374	374	374	374
Gender	Pearson Correlation	,161**	,062	1	-0,025	-0,024	-,191**	-0,023
	Sig. (2-tailed)	0,002	0,235		0,628	0,647	<,001	0,654
	N	374	374	374	374	374	374	374
Age	Pearson Correlation	-,106*	,103*	-0,025	1	-,193**	-0,044	,427**
	Sig. (2-tailed)	0,041	0,047	0,628		<,001	0,397	<,001
	N	374	374	374	374	374	374	374
Education	Pearson Correlation	0,032	-,167**	-0,024	-,193**	1	0,031	-,168**
	Sig. (2-tailed)	0,542	0,001	0,647	<,001		0,547	0,001
	N	374	374	374	374	374	374	374
UnderAI	Pearson Correlation	-,188**	0,096	-,191**	-0,044	0,031	1	0,037
	Sig. (2-tailed)	<,001	0,062	<,001	0,397	0,547		0,477
	N	374	374	374	374	374	374	374
Tenure	Pearson Correlation	-0,098	0,097	-0,023	,427**	-,168**	0,037	1
	Sig. (2-tailed)	0,059	0,06	0,654	<,001	0,001	0,477	
	N	374	374	374	374	374	374	374

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

* Correlation is significant at the 0.05 level (2-tailed).

Appendix 7: Group Statistics

Group Statistics

	Source	N	Mean	Std. Deviation	Std. Error Mean
Turnover	CEO	195	3,7487	1,47216	,10542
	Direct Supervisor	179	3,8994	1,53482	,11472

Group Statistics

	Source	N	Mean	Std. Deviation	Std. Error Mean
Justice	CEO	195	4,3877	1,04628	,07493
	Direct Supervisor	179	4,3866	1,04797	,07833
