



universität
wien

MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

„Retaining talent in the digital work environment“

verfasst von / submitted by

Emanuela-Maria Ispas, BSc

angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of
Master of Science (MSc)

Wien, 2023 / Vienna 2023

Studienkennzahl lt. Studienblatt /
degree programme code as it appears on
the student record sheet:

UA 066 915

Studienrichtung lt. Studienblatt /
degree programme as it appears on
the student record sheet:

Masterstudium Betriebswirtschaft

Betreut von / Supervisor:

Univ.-Prof. Dr. Oliver Fabel, M.A.

Table of Contents

List of Abbreviations	ii
List of Figures	ii
List of Tables	ii
Abstract	iv
Zusammenfassung.....	v
I. Introduction	1
II. Theoretical Background	3
2.1 Digital transformation in organizations and the impact of digitalization on the work environment.....	3
2.2 Digitalization's impact on employees, their attitudes and their behaviour at the workplace	8
2.3 Turnover, Turnover Intentions and their importance	15
2.3.1 Factors influencing turnover intention.....	18
2.3.2 Turnover Consequences.....	23
III. Methodology	25
3.1 Hypotheses Development.....	25
3.2 Research Model.....	26
3.3 Research Method.....	26
3.4 Survey Design	27
3.5 Data Analysis	28
IV. Results.....	30
4.1 Descriptive Statistics	30
4.1.1 Demographics	30
4.1.2 Digitalization.....	34
4.1.3 Job Satisfaction	37
4.1.4 Turnover Intention	38
4.2 Statistical Analysis	39
4.2.1 Reliability Analysis.....	39
4.2.2 Regression Analysis.....	40
4.2.3 Mediation Analysis	42
V. Discussion.....	44
5.1 Theoretical Implications.....	45
5.2 Practical Implications	46
5.3 Limitations and future research suggestions	48

VI. Conclusion	49
References.....	51
Appendix A: Survey questions	I
Appendix B: Regression analysis	VI
Appendix C: Mediation analysis.....	XII

List of Abbreviations

AI	Artificial Intelligence
CEO	Chief Executive Officer
CIO	Chief Information Officer
HR	Human Resources
ICT	Information and Communication Technology
IS	Information Systems
IT	Information Technology
M	Mean
SD	Standard Deviation

List of Figures

Figure 1 – Mediation Model
Figure 2 – Mediation Model – Results

List of Tables

Table 1 – Age Groups
Table 2 – Gender
Table 3 – Country of employment
Table 4 – Level of education
Table 5 – Industry of employment
Table 6 – Tenure in the industry of employment
Table 7 – Tenure in the current job
Table 8 – Frequencies - Attitude towards digital transformation

Table 9 – Frequencies - Attitude towards new technologies (1)
Table 10 – Frequencies - Attitude towards new technologies (2)
Table 11 – Frequencies - Use of Information Technology on the Job
Table 12 – Frequencies - Job satisfaction (1)
Table 13 – Frequencies - Job satisfaction (2)
Table 14 – Frequencies- Turnover Intention
Table 15 – Reliability Analysis
Table 16 – Regression coefficients
Table 17 – Mediation coefficients

Abstract

Digitalization started shaping every domain in the past decades by changing multiple facets of everyday activities. A crucial aspect significantly impacted by the introduction of digital technologies is the work environment, its processes and its employees. The aim of this thesis is to examine the relationship between digitalization and employee turnover intentions and to investigate if this relationship is being mediated by job satisfaction.

This thesis follows a quantitative research design to collect data from employees in different industries. After analyzing the data of 138 employees from Austria and Germany, who participated in the online survey, results showed that digitalization had a positive effect on job satisfaction, which in turn had a negative effect on employees' turnover intentions. The relationship between digitalization and employees' turnover intentions was described through an indirect only mediation through job satisfaction.

The thesis intends to add to previous research by providing empirical evidence on the relation between digitalization, job satisfaction and turnover intention. The findings of this paper shall benefit managers and practitioners who seek to implement digital technologies in their organizations by enabling them to assess the possible effects of digitalization initiatives on employees' job satisfaction and turnover intention.

Zusammenfassung

Die Digitalisierung hat in den letzten Jahrzehnten begonnen, alle Bereiche zu prägen, indem sie zahlreiche Facetten der täglichen Arbeit verändert. Ein entscheidender Aspekt, der durch die Einführung digitaler Technologien erheblich beeinflusst wird, ist die Arbeitsumgebung, ihre Prozesse und ihre Mitarbeiter. Ziel dieser Arbeit ist es, den Zusammenhang zwischen der Digitalisierung und der Fluktuationsabsicht der Mitarbeiter zu untersuchen und zu prüfen, ob dieser Zusammenhang durch die Arbeitszufriedenheit vermittelt wird.

Diese Arbeit folgt einem quantitativen Forschungsdesign, um Daten von Arbeitnehmern in verschiedenen Branchen zu erheben. Nach der Analyse der Daten von 138 Arbeitnehmern aus Österreich und Deutschland, die an der Online-Befragung teilgenommen haben, zeigen die Ergebnisse, dass die Digitalisierung einen positiven Effekt auf die Arbeitszufriedenheit hat, der sich wiederum negativ auf die Fluktuationsabsichten der Arbeitnehmer auswirkt. Der Zusammenhang zwischen der Digitalisierung und den Fluktuationsabsichten der Beschäftigten wurde durch eine indirekte Mediation über die Arbeitszufriedenheit beschrieben.

Die Arbeit soll die bestehende Forschung ergänzen, indem sie empirische Belege für den Zusammenhang zwischen Digitalisierung, Arbeitszufriedenheit und Fluktuationsabsicht liefert. Die Ergebnisse dieser Arbeit sollen Managern und Fachkräften, die digitale Technologien in ihren Unternehmen einführen wollen, helfen, die möglichen Auswirkungen von Digitalisierungsinitiativen auf die Arbeitszufriedenheit und die Fluktuationsabsicht der Mitarbeiter zu beurteilen.

I. Introduction

As technology evolves rapidly, the digitalization trend has become increasingly powerful by transforming nearly every industry sector, from information technology and communication to public administration and health. Digital technologies are being integrated into all aspects of an organization's strategy, culture and operations, leading to changes in how organizations operate and interact with their customers. A significant challenge organizations have to overcome in today's digital age is embracing new technologies and successfully introducing them into their daily activities. If organizations fail to grasp digitalization, they risk missing out on opportunities in the present highly competitive markets.

A substantial amount of research focuses on one of the most significant effects of digitalization, namely its impact on employees. As organizations increasingly adopt digital technologies, employees are expected to adapt to new ways of working, which in some cases, may be challenging. Digital technologies represent an essential means for improving work processes, increasing efficiency and boosting productivity. Implementing new technologies involves fundamentally changing organizational structures, workflows and employee relationships (Johnson & Yanson, 2015). Digitalization also implies a change of workplaces and requires employees to develop new skills and learn new roles and routines in order to continue to remain relevant in the workforce. While the effects of digital transformation on employees remain a relevant topic in the literature, the outcomes are ambiguous.

On the one hand, digitalization positively influences job satisfaction, employee productivity, communication within work teams, working flexibility, worker autonomy and job security through the new jobs created (Johnson & Yanson, 2015). On the other hand, digitalization also leads to adverse outcomes such as increased job stress, blurred work-life balance, negative behaviours and reactions to technology-induced change, job insecurity through the automation of tasks, the fear of losing a job and turnover intentions among employees (Johnson & Yanson, 2015; Alieva & Powell, 2023). Multiple literature sources address the concerns of physical labour and routine tasks being replaced by digital technologies such as artificial intelligence, robots and other advanced technology machines and their impact on employees. In a study where computerized machines and robots were recently implemented in the workplace, employees compared themselves to the new technologies by highlighting a crucial finding. On one side, "robots cannot replace the people"; at the same time, "robots don't get sick" (Alieva & Powell, 2023, p. 17). Thus, digitalization provokes multiple and different attitudes and

beliefs among employees, which need to be further analyzed in order to acquire a better understanding of the impact of digitalization on the work environment and its employees. Hence, the thesis aims to investigate the relationship between the implementation of digital technologies in the work environment and employees' resulting reactions and behaviours by focusing on the following research question:

How does digitalization impact employees' turnover intentions?

As digitalization dramatically changed the workplace and its processes, it also influenced employees' decisions to stay or leave a job. This field of research is particularly relevant in today's digital age, as it sheds new light on how these changes affect employees' satisfaction and commitment to their jobs and employer. Tracking turnover represents a primary goal of every organization as it helps HR teams understand their workforce health and make strategic decisions to retain talented staff. As employee turnover can be costly for organizations both in financial terms and in terms of productivity, it is essential to understand the effect of digitalization on employees' turnover intentions in order to develop strategies to retain employees and reduce turnover costs (Hom et al., 2020).

Thus, focusing on the impact of digitalization on employees' turnover intentions represents an opportunity to shed new light on a highly useful research area that can provide insight into how digitalization is changing the work environment and how organizations can adapt to these changes in order to boost employee retention and organizational performance.

The thesis follows a conventional structure starting with an extensive theoretical background of the topic and subsequently derived hypotheses are presented. The methodology will then be conferred. The results chapter will commence with the demographic and descriptive statistics and will complete the statistical analysis of the data. In the discussion section, results will be interpreted, limitations will be acknowledged, and further research recommendations will be given. Finally, the conclusion will be formulated to highlight this research's main findings.

II. Theoretical Background

2.1 Digital transformation in organizations and the impact of digitalization on the work environment

Terms like digitalization, Industry 4.0, Internet of Things, and Big Data have been extensively used and analyzed in the past decade, shaping the digital transformation process of every sector or subject of interest. Every domain or activity faces a transformation due to the digital advance of the past years. Still, how one can begin to define each term, trend, and the changes that occurred in the context of digitalization and Industry 4.0 and how can be described the impact of digitalization will be explained in this chapter.

In order to grasp the meaning of digitalization, it is essential to understand the difference between two terms that are usually mixed up with each other: *digitization* and *digitalization*. Many scholars highlight this essential distinction, acknowledging that digitization is the simple process of converting analog data into digital information (Bermann & Marshall, 2014). An example of such a conversion is scanning a document and thus changing the physical pages into bytes. It also involves changing manual processes into digital ones, such as switching from hand-filled documents to online versions, automatically stored in a database. When referring to the “paperless office”, the defining process, which enables it, is digitization and not digitalization. Digitizing has a vast impact in many areas as it implies significant operational efficiency, reduced errors and collecting of data that was not possible in the past (Gobble, 2018).

Using digital technology and digitized information in order to create new value is referred to as digitalization. What makes digitalization different is the fact that, unlike digitization, it changes the business itself, it drives new or adapted business models and breaks fundamental business strategies. Digitalization uses digitized data as a basis of knowledge to act and change, ultimately triggering the digital transformation process (Gobble, 2018; Legner et al., 2017). Digitalization again involves a transformation of businesses, constant revision and upgrading of new business models, an adaption of business strategies and fundamental innovation of business processes (Parida et al., 2019). In order to achieve and maintain performance, digitalization requires businesses to change their organizational culture and leadership type (Cortellazzo et al., 2019). While *digitization* is defined as an action, digitalization is more of a complex process, which involves changes at different levels of a business.

Digitalization is being described from three different perspectives. First, from the business perspective, *digitalization* is defined as enabling, enhancing and transforming business operations, functions, processes and activities by using digital technologies that can be leveraged towards a predefined goal. The second perspective describes the process of digitalizing an environment, such as the workplace, which implies adopting digital tools and platforms for different activities. The third perspective refers to the continuous embracement of digital technologies in all community and human activities, such as digital healthcare, digital predictive or preventive medicine, digital governance, digital advertising and so on (Tănase & Paraschiv, 2020).

The processes of digitization or digitalization of practices in organizations are often described in the literature as the concept of digital transformation. However, a general definition of digital transformation does not exist as a unified consent of the scientific community. As a practical implication, the lack of a unified definition of digital transformation is causing difficulties for executives such as CEOs or CIOs to “claim authority and responsibility for the strategy and implementation of the digital transformation of their organization” (Gong & Ribiere, 2021, p. 2). Furthermore, given the complexity of this concept, it is difficult to compete against and compare with other industry’s companies on metrics regarding digital transformation, job responsibilities and HR issues (Gong & Ribiere, 2021).

Various scholars describe digital transformation as a strategy, a process or a business model (Barišić et al., 2022). A company seeking to introduce a digital transformation process should be prepared to change its organizational culture significantly. Moreover, a company’s digital transformation implies introducing an organizational culture to support the transformation and “enabling the company’s overarching strategy” (Hemerling et al., 2018). Supporting the theory that digital transformation implies an organizational change of culture within a business, Verina and Titko (2019) propose an extensive description of “digital transformation” by evaluating different definitions from existing literature. Therefore, digital transformation combines advanced technologies that enhance business processes and transform different aspects such as the business model, the customer experience, business operations and decision-making processes, working people and networks (Ismail et al., 2017). The aims of such a transformation are improved overall performance and engaged talent (Deloitte, 2018), more profitable revenue and higher efficiency, leading to greater competitive advantage (Schwertner, 2017). Additionally, digital transformation involves an improved attitude towards change by

adjusting core competencies and converting to more customer-driven tactics (Bloomberg, 2018).

While the topic of digitalization and digital transformation is of great importance in many aspects of human society, this thesis will focus only on the impact of digital transformation on aspects concerning organizations, their employees and the workplace. Accordingly, digital transformation and technology-induced change enhance the necessary goal-oriented focus an organization needs in order to succeed in the digital age (Urbach & Röglinger, 2018). Implementing digital technologies will completely change the ways of working, the roles of employees and the products or services offered by a business. According to Parviainen et al. (2022), digital transformation causes changes at different levels of a business:

- Process level: by adopting new digital tools and simplifying processes, manual operations will be reduced;
- Organizational level: update of business services;
- Business domain level: transforming roles and value chains of the ecosystems;
- Society level: converting types of work or of means of shaping decision-making.

The benefits of introducing and implementing the digital transformation within an organization are tremendous. By digitizing “information-intensive processes”, costs can be reduced by 90%, and the turnaround can be significantly revised (Parviainen et al., 2022, p. 64). Moreover, the way of doing business and gaining competitive advantage is changed through digital communication opportunities and virtual networks (Parviainen et al., 2022).

With digital technologies making one of history’s most accelerated adoption rates during the last two decades, digitalization contributes to incredible economic growth. Along, countries which achieved a high stage of digitalization acquire 20% more economic benefits than still developing countries. Furthermore, digitalization has an impact on decreasing unemployment, it enhances the overall quality of life, improves access to public services and allows governments to operate in a transparent and efficient manner (Sabbagh et al., 2012).

Scholars argue that the digital transformation of businesses leads to 3 significant changes which can be observed in every industry worldwide: digitally supported and interconnected processes, digital communication and new ways of generating value based on digital innovations or acquired digital information (Hausberg et al., 2019; Fitzgerald et al., 2014).

In the attempt to develop a framework for the concept of digital transformation, which includes technologies, management and processes and people as components that must be aligned in order to achieve a successful digital transformation of the business, Verina and Titko (2019) conclude that there are several drivers which enable the process of digital transformation. The results show excellent outcomes and benefits for businesses, such as boosting sustainable growth, more practical knowledge collection, sharing and use, easier access to global markets, improved market intelligence, faster innovation, improved efficiency and reduced costs, new revenue model opportunities, more significant customer interaction and collaboration and finally greater competitive advantage (Verina & Titko, 2019).

Along with the impact on organizations, digital technologies are changing the work environments for employees. Companies are reorganizing their workplaces and switching to digital solutions regardless of the size or sector of the company. Hence, to profit from the benefits of digitalization, leaders must invest in retraining and upskilling employees not only to keep up with new technologies but also to stimulate and support them (Cortellazzo et al., 2019). Depending on the tools and technologies employees need to complete their tasks, every organization has a digital toolbox for its job functions. The digital workplace toolbox consists of many categories, from technologies to support communication and collaboration to business applications and systems for enhancing crowd-sourcing, connectivity and mobility. To benefit from the digital toolbox, organizations should focus on a holistic digital workplace strategy which must align with the goals, focus area and organization's culture (Deloitte, 2021).

Despite multiple improvements acknowledged and presented in the literature, scholars argue that digitalization and the path of digital transformation are also causing challenges for organizations. Many organizations quickly implement new technologies but stumble at implementing the most necessary means, such as their intranet, which is an excellent tool for solving communication problems, increasing workflow and enhancing knowledge sharing. Thus two risks arise from the lack of appropriate digital transformation. First, because of an inadequate tool to facilitate collaboration, information is dispersed across multiple applications, making it difficult for employees to keep track of files and communication streams. This fact causes a loss in productivity at the workplace. Second, because of the increased data exposure resulting from digitalization, the risk of security breaches caused by having data hacked or leaked outside the organization becomes higher. Hence, having a secure intranet to be able to survive cybersecurity threats is essential in the process of digital transformation (Hicks, 2019).

As a result of the digital transformation process, an organization may experience work conflicts due to opposing attitudes and forms of resistance among employees (Trittin-Ulbrich et al., 2020). Due to the shift to digital technologies in the workplace, the expectations for employees also change: digital solutions tend to require always to be “on”, which shapes an organization’s culture and reform the way employees do their jobs (Haddud & McAllen, 2018).

Another big challenge caused by the adoption of digital technologies is the so-called technostress and techno addiction which is perceived as a form of workaholism caused by an excessive and compulsive use of information and communication technology (ICT). Technostress is a psychological state of stress caused by information technology (IT) use or IT use demands. Technologies at the workplace can often be overwhelming, a great source of pressure and perceptions of overload. Technostress proved to cause computer anxiety further. Researchers have focused on IT use effect on the working life and tried to provide explanations relating to employees’ attitudes towards change with the dimensions of the technology acceptance model. Accordingly, organizations that wish to increase the use of IT systems should grant managerial support and promote closer relationships among work colleagues to reach a more favorable attitude towards IT systems and the digitalization process. Hence, to increase the positive effects of digitalization and compress its opposing sides, organizations’ aim should be to achieve a certain “digital maturity”, which describes the capabilities to take advantage of opportunities provided by the progress of digitalization and digital transformation and the abilities to implement the right strategy to accomplish the organization’s vision and goals (Cazan, 2020).

2.2 Digitalization's impact on employees, their attitudes and their behaviour at the workplace

Digitalization's impact on organizations is extensive and comes with significant changes, opportunities as well as challenges for the transformed workplace, but how do employees encounter the digital transformation affecting their work environment?

During the last decades, digital transformation has been described as a reason for job creation and destruction. While some jobs can be performed equally well or more efficiently by machines, some jobs cannot be substituted by machines. However, new jobs are designed as complementary tasks created because of machine adoption. Many job domains were created due to ICT evolution and are still hard to digitalize. Programming and Data Analysis, for example, are two areas of expertise which consist of tasks that only existed after digitalization and employ millions of people nowadays (Balsmeier & Woerter, 2019). With new tasks and job roles created by the development of digital technologies, the tempo of daily life has increased. ICT allows us to do tasks easier and faster, but the amount of activities is also growing, leading to people feeling more overwhelmed and pressured in this speed-up society (Cijan et al., 2019).

Job satisfaction

When researching digitalization's impact on employees, one of the most analyzed topics is the effect on job satisfaction. With new business models and strategies implemented due to the organizational change caused by digitalization, job tasks are usually restructured and, thus, influence job satisfaction. Job satisfaction is the perceived feeling about an employee's job and their views towards all aspects of the job and the employer (Cijan et al., 2019). Job satisfaction is also defined as the result of multiple attitudes an employee has gained, ultimately influencing general life satisfaction (Ratna & Kaur, 2016). Scholars state that due to the use of IT, employees work smarter and, thus, achieve increased job satisfaction (Cijan et al., 2019). According to Ratna & Kaur (2016), the implementation of new technologies at work leads to the following outcomes among employees: increased devotion, the belief that their effort is being acknowledged and that they can efficiently multitask, the presumption of better work chances and that all the necessary resources to do their job are given. Eickemeyer et al. (2021) argue that job satisfaction is also achieved when technologies of Industry 4.0, such as Robot Process Automation, are implemented at work because this will frequently replace recurring or tedious tasks previously done by humans and ultimately enable employees to focus on more complex tasks.

Scholars emphasize that digitalization can have a positive (by reducing repetitive tasks, for example) or negative (by increasing the stress level, for example) impact on job satisfaction. Therefore Bolli and Pusterla (2022) argue that changes in job characteristics driven by digitalization have multiple effects on employees' work life and job satisfaction. They develop multiple dimensions to assess the positive as well as the negative effects of digitalization on job satisfaction. The time pressure, the fear of losing the job and the poor work-life balance resulting from digitalization proved to harm job satisfaction. However, due to digital technologies, work becomes more attractive, productivity rises, employees become more autonomous, working time is more flexible, and interaction with work colleagues is easier. Accordingly, digitalization contributes to creating and developing new kinds of tasks and activities in the work environment, which "require specific skills, provide physical security, and increase personal control, all factors that are positive for job satisfaction" (Bolli & Pusterla, 2022, p. 268). Additionally, through digitalization, repetitive and physically straining tasks are considerably reduced. Thus, employees can use their time at work more efficiently and focus on more rewarding and productive activities, which positively affect their satisfaction at work.

Work-life balance

Another widely discussed stream in the literature regarding factors that affect employees through or after the rapid development of digital technologies and their implementation at work is the work-life balance. Scholars argue that digitalization causes a blurred work-life balance (Cijan et al., 2019; Chopra & Sharma, 2020). Work-life balance is "a comfortable state of equilibrium achieved between a person's primary priorities of their employment position and their personal lifestyle" (Ratna & Kaur, 2016, p. 2). Hence, the equilibrium is reached if one's career does not impede the joy of having personal time. Technology devices and digital solutions have been of great help for labour as they facilitated an easier, more efficient and more smooth way of working. However, whether digitalization leads to a decrease in workload and stress is controversial. On the one hand, digitalization increases work flexibility; on the other hand, flexibility is accountable for blurring the boundaries between work and personal or family life (Ratna & Kaur, 2016).

Additionally, digitalization might increase expectations at work by encouraging managers to think that employees are always available to work since accessibility is granted. Thus, this increases stress at work (Cijan et al., 2019; Ratna & Kaur, 2016; Towers et al., 2006). For example, having a smartphone increases employees' flexibility but accounts for longer work

hours and blurs the work-life balance. Moreover, it is hard for employees to switch off from work when being home, and hence, it is difficult to control the time spent on technology devices for work purposes while being away from the physical workplace (Cijan et al., 2019).

According to recent literature, digitalization started to affect employees' work-life balance as soon as employees – mainly executives – “became reachable beyond traditional working hours” (Chopra and Sharma, 2020, p. 3386). Mixing work and personal life is nowadays a socially accepted practice. Therefore digital technologies facilitating remote access to work tools became a stress factor for employees.

Innovative ICT enables employees to access work-related knowledge more efficiently and communicate faster with work colleagues, thus achieving higher performance levels. Nevertheless, digital ICT and its capability to collect data, record work hours and task execution or keep track of workplaces promote the increase of employee monitoring. This fact can be observed when evaluating the performance indicators of employees (Gerten et al., 2018). While this intensive control causes employees to change their behaviour to achieve their target corporate goals, scholars argue that digital technology and its use promote higher worker autonomy among employees (Gerten et al., 2018; Cijan et al., 2019). Gerten et al. (2018) concluded that ICT could cause an increase in both monitoring of employees as well as employees' autonomy in organizations. According to Cijan et al. (2019), worker autonomy refers to the extent of control employees have over their job and tasks. It indicates employees' freedom, discretion and independence when organizing and planning their working tasks or executing different activities without the need for managerial approval. Due to innovative ICT, which contributes to a better work environment in terms of working place, time and executing different tasks, worker autonomy increases. Moreover, technology and digitalization empower employees through increased knowledge access and effective communication.

Zeshan et al. (2021) also argue that there is a positive relationship between an organization's digitalization and its employees' need for autonomy. Accordingly, autonomy is a crucial factor for achieving desirable outcomes from employees, and job autonomy positively impacts employees' performance, intrinsic motivation and problem-solving. Moreover, the self-determination theory suggests that by satisfying the need for autonomy, employees' motivation rises. The increased motivation has multiple effects on employees' state, such as decreased burnout, work exhaustion and turnover and increased satisfaction, commitment and

performance. Sun (2017) also presents support in his research that digitalization and the use of technology positively affect employees' autonomy and work performance.

Improved communication

One of the most essential operational improvements generated by the high advancements in digital technology is the enhancement of internal communication within organizations (Fitzgerald et al., 2014). Accordingly, internal communication improved, especially through using social media. In their research about remote work in the context of digitalization, Sheveleve and Rogov (2021) acknowledge that through the enhancement of digital technologies, communication within the organization is more pleasant and concise and allows employees to engage better in business communications. Bolli and Pusterla (2022) suggest that digitalization simplifies work colleagues' and superiors' interactions through new communication tools. Moreover, through social networking sites, employees can better build social relationships, which increases their organizational commitment and job satisfaction. Internal knowledge sharing within an organization is also enhanced by an organization's Intranet. Using the Intranet proved to boost social capital and increase work quality and employees' job satisfaction (Bolli & Pusterla, 2022).

Job insecurity and negative reactions to change

Even though the implementation of digital technologies aimed to enhance the work life and it proved to do so indeed, digitalization can also cause negative reactions and behaviours among employees. In their study of employees' reactions to the implementation of Industry 4.0 technologies, Eickemeyer et al. (2021) argue that this lead to job insecurity and negative reactions to change, especially among older employees. Accordingly, the scholars present multiple behavioural phases employees show during the digitalization change process, from early introduction stages, such as shock and denial, to late phases, like understanding and integration. Moreover, the feeling of insecurity at the job may result from the fear of losing a job or facing a vertical occupational change at the workplace. Employees might fear that due to the technological transformation, they would not be able to keep up with the innovative technologies, and they would be disqualified, as new tasks may be developed and old tasks fused or eliminated. Possible symptoms of job insecurity include "disengagement in social events of the company and increased activity in employment-oriented platforms, such as LinkedIn, and higher short-term leave" (Eickemeyer et al., 2021, p. 11). This may suggest a typical behaviour of an employee willing to quit and searching for other employment

opportunities; hence, employee turnover might be affected. Furthermore, Eickemeyer et al. (2021) explain that the necessity of new skill learning and increased autonomy can lead employees to have a negative change in attitudes, avoidance of adapting to digitalization and negative feelings towards the technology. Technology anxiety is also an outcome observed by scholars which is caused by “an overwhelming amount of information input from the digital devices, lack of knowledge and information, lack of user experience, the complexity of the technology user interface, lack of expertise, guidance, and assistance” (Eickemeyer et al., 2021, p. 12).

When introducing a new technology or system within an organization, resistance to change shown by employees is common and even natural and expected. Work changes can threaten employees’ financial security and identity and cause anxiety and uncertainty. Motivating employees to use new technology might be challenging, so their resistance to modern technology changes might threaten its execution and implementation. Accordingly, resistance to change was a primary cause of IT project failures. Thus, introducing new technology and IT innovations in organizations produces fear and negative effects on employees’ attitudes. There are multiple reasons for change resistance discussed in the literature. Some of the reasons refer to multiple kinds of fears such as losing a job, the fear of unexpected change and inability to adapt to new technologies, low tolerance for the change, breach of personal pacts, competing commitment, non-reinforcing reward systems, peer pressure, a climate of mistrust in the workplace, organizational politics, poor timing, loss of control and loss of existing support systems (Basyal & Seo, 2017).

Reskilling and job displacements

According to McKinsey (2020), significant reskilling and job displacements will eventually affect all employees in the following years. Whether it will imply improving existing skills by leveraging technology while keeping the current job, changing roles by developing certain skills while keeping the current job or acquiring new skills in order to perform new tasks, millions of employees will be impacted by technological change. Moreover, reskilling and upskilling play a key role in talent transformation, which must be acquired to keep up with the automation process and benefit from digital technology implementation.

Talent attraction, work efficiency and employee involvement

Gasparovich et al. (2020) argue in their research paper that a company which successfully completes its digital transformation process will acknowledge the impact of digitalization on

employees in terms of higher talent attraction, higher work efficiency and higher employee involvement. Moreover, an organization that offers an appropriate internal digital environment convenient for its employees also contributes to a higher employee engagement and loyalty. This effect is incredibly accurate for employees belonging to generation Z because these people grew up with digital technology and developed basic skills by default. Therefore “digitalization [...] has a direct productive impact on the level of employee engagement” (Gasparovich et al., 2020, p. 149).

Attitude towards digitalization and new technology

In their study of employees’ attitudes towards digital workplace transformation, Meske and Junglas (2021) argue that when employees expect to be autonomous, competent regarding the new technology and being able to master it and also expect to be more connected at work, the expected future work performance and well-being at the workplace are higher. High expected work performance and well-being have a significantly positive effect on employees’ attitudes toward digital workplace transformation, and accordingly, they actively support the digital change process. Thus, it is important to observe which factors lead to favourable attitudes among employees to be able to assist their willingness to engage in the organization’s digital transformation process. This will ultimately guarantee a successful digital transformation within organizations.

According to Haddad (1996), employees’ reactions to new technology depend on their position in the organization’s hierarchy. Studies have shown differences among different levels of employees’ skills and their attitudes towards the implementation of new technology at the workplace. Hence, low-skilled employees working in assembly line functions, for example, perceived the technology as a threat to their job security. In contrast, skilled employees showed a positive attitude towards new technology. Similarly, very supportive attitudes toward new technology were observed in employees with high job involvement, regardless of their skill level. Furthermore, “employees with low job status and control are likely to exhibit stronger negative attitudes toward new technology because they fear they have the most to lose, and the least to gain, from technology use” (Haddad, 1996, p.146). Despite the job position, the implementation process influences employee attitudes. Even higher-level employees show resistance to technology adoption if the planned transition is not thoroughly planned, when there is a lack of adequate training provided or when there is a lack of organizational procedures to ease the transition (Haddad, 1996).

According to the literature, how employees react to change is essential in managing and assessing the overall change process. Concerning technology-induced change, the same assumption applies. Schraeder et al. (2006) suggest that it is imperative that employees are involved and participate in the process of technology implementation and related decisions in order to achieve successful adoption of the new technology. Otherwise, the consequences include the resistance of employees, outright sabotage and severe attitudinal implications. “Specifically, failing to include employees in the process can lead to cynicism. Cynicism, in turn, is linked negatively to job satisfaction and commitment” (Schraeder et al., 2006, p. 87; Reichers et al., 1997).

Trenerry et al. (2021) design a very consistent review of existent research on attitudes and perceptions relating to technological change and highlight some key findings. Accordingly, researchers have found that higher awareness of job insecurity caused by introducing new technologies at the workplace are negatively related to organizational commitment and job satisfaction and positively related to cynicism, depression and turnover intentions (Li et al., 2019; Trenerry et al., 2021).

Studies done in the healthcare industry showed both positive and negative attitudes of medical physicians regarding new digital technologies such as AI. Therefore, they did not express concerns about their jobs becoming redundant or doubt that technology may outsmart humans and replace their tasks but showed signs of scepticism. However, the majority believed that new technologies would change in some way their jobs and acknowledged technology’s potential in the healthcare system as constructive (Taşdoğan, 2020; Trenerry et al., 2021). Studies from the service industry concluded that employees have a supportive attitude towards new technologies, such as self-service technologies, which were perceived to improve their work productivity, increase their scope of work and enhance the quality of work and satisfaction (Di Pietro et al., 2014; Trenerry et al., 2021). Nevertheless, further research showed that attitudes towards self-service technologies were moderated by the type of job and automation. Employees who perceive new technologies as leading to future job loss are likely also to attain negative attitudes (Hettich, 2017; Trenerry et al., 2021). Other studies showed that the utter awareness of new technologies such as innovative technology, AI, robotics and algorithms caused employees to develop perceptions of potential job redundancy, depression, lower organizational commitment and career satisfaction and finally, increased turnover intentions (Hettich, 2017; Li et al., 2019; Trenerry et al., 2021). The strong association between AI and robotics awareness and employee’s intent to turnover has been proved in Li et al. (2019)

research; however, the relationship between the variables was moderated by the perceived organizational support and competitive psychological climate (Trenerry et al., 2021).

2.3 Turnover, Turnover Intentions and their importance

The employment market has faced many changes during the past decades. As employee benefits increase, attracting and retaining valuable human assets becomes harder. Employers have to overcome a great challenge: the constant search for hard-to-find resources and developing new and better benefits to differentiate from the competition and be an organization “of choice” for potential employees (Harkins, 1998). Moreover, attracting talent is not the only barrier an employer has to overcome; retaining employees is also tricky. Turnover and turnover intention of employees has always been a critical concern for every organization regardless of size, location or activity area.

In order to highlight the importance of turnover for organizations, Harkins (1998) argues that during unstable times, employers can face high annual turnover rates of between 30 and 40 per cent. That unplanned turnover can be associated with high costs reaching three to five times the lost employee’s annual salary. Since every successful organization’s primary goal is to keep its essential resources, it is also its responsibility to find a way to keep its employees. Not every organization has the same strategy when it comes to retaining talent. While some organizations have competent HR teams, which know how to keep their talent committed so recruiters do not stand a chance to convince their employees to consider better opportunities, other organizations are described as “builders” who train and develop their employees to let them move on finally. Accordingly, it is essential for an organization to know how to keep its talent satisfied and avoid becoming a builder with a vulnerable workforce.

The term turnover refers to the “loss of a human resource that requires a replacement” (Harkins, 1998) or the “permanent movement of an employee beyond the boundary of his/her workplace/organization” (Rahman & Nas, 2013, p. 568). Scholars distinguish between three categories of employee turnover: unavoidable, desirable, and undesirable. Unavoidable turnover appears due to retirement, sickness or severe family issues. Desirable turnover is a consequence of unqualified employees and undesirable turnover refers to the loss of talented and qualified employees (Ellett et al., 2007; Ngo-Henha, 2017).

Another differentiation presented by literature is the one between voluntary and involuntary turnover: the first refers to an employee's will to leave the organization, and the latter refers to the management's decision to demand the leave of an employee (Belete, 2018).

The literature on turnover is extensive but mainly focuses on finding the causes of turnover and suggesting strategies for its reduction. Since this approach is still causing challenges, most scholars concentrate on employee turnover intention. According to Price & Mobley (1983), analyzing turnover intentions will improve the appreciation of the actual causes of turnover. However, it is essential to note that employees' attitude and behaviour before deciding to leave their job also depends on social, economic and psychological factors (Ngo-Henha, 2017). Moreover, employees consider various opinions, feelings and facts before leaving. Acting on their decision to end their employment will only occur when there exists a certainty that the move will be easy. Thus, employees' eagerness to end their employment is generally equivalent with the turnover intention (Jeswani & Dave, 2012; Ngo-Henha, 2017).

The turnover intention represents the probability or likelihood that an employee will leave his current job (Belete, 2018). The turnover intention is a vague phenomenon and mirrors an employee's attitude towards their employer (Ngo-Henha, 2017). Carmeli and Weisberg (2006) describe three elements as part of the turnover intention process: first, the thoughts of quitting the job. Second, the intention to search for another job somewhere else and third, the actual intention to quit. Across the literature, the relationship between the intention to turnover and the actual turnover may vary or be moderated by different variables such as labour market conditions or employee motivation. However, the existing literature presents "consistent evidence showing that turnover intentions are the strongest cognitive precursor of (actual) turnover" (Carmeli & Weisberg, 2006, p. 193).

Turnover intentions have been widely studied across literature and have been associated with multiple existing theories throughout the years. Some of the essential theories and their approach regarding turnover intentions will be reviewed below.

Theory of Organizational Equilibrium (TOE). The TOE presented by March and Simon (1958) argues that employees' contributions and incentives need to be in equilibrium with those of the organization. According to Holtom et al. (2008), TOE was considered the first theory to touch upon turnover intention since it argues that turnover is a decision which is taken after considering both the perception of one's contribution and the perception of the contribution of the organization to one's state. Accordingly, TOE considers that an employee's equilibrium is

determined by two factors: the perceived desirability of movement and the perceived ease of movement. Additionally, these two factors are two of the main factors determining job satisfaction, which directly impact turnover intention (Holtom et al., 2008; Ngo-Henha, 2017).

Social Exchange Theory (SET). According to Cropanzano & Mitchell (2005), the SET assumes that the relationship between two social entities is shaped by the extent to which each of the two entities respects social rules and norms of exchange between the two parties. Examples of such attributes are trust, loyalty and commitment. The SET also assumes that employees are connected by ties whose strength impacts their intention to keep or leave their jobs. Thus, turnover intention can be perceived as a consequence of not respecting prior agreed rules by management or work colleagues. Consequently, an employee could decide to turn over if there exists a violation of prior agreements (Holtom et al., 2008).

Job Embeddedness Theory (JET). The JET hypothesizes that employees build, throughout the years, multiple connections not only at their workplace but also in their communities. Once those connections are built, employees feel integrated with the professional and social environment to avoid losing their existing relationships in a different or unknown environment. Moreover, colleagues, relatives and friends represent the main factors sketching an employee's social and professional relationships. According to JET, an employee's organizational and community integration depends on multiple factors, including personal values, career goals, knowledge and skills, organizational culture, job requirements, and general aspects such as climate, religious beliefs and entertainment activities. Furthermore, according to the JET, typical sacrifices employees would have to make involve giving up familiar colleagues, exciting projects, corporate benefits, good day-care or local club membership. JET claims that employees will keep their job as long as they feel a sense of embeddedness towards their professional and social environment. Once the feeling of embeddedness is lost, they will consider turnover. Hence, organizations should aim to adjust their retention strategies and maintain a feeling of embeddedness towards employees' professional and social environment in order to ensure low turnover intention rates (Zhang et al., 2012; Ngo-Henha, 2017).

Herzberg's Two-Factor Motivation-Hygiene Theory. The Two-Factor Motivation-Hygiene Theory proposes two kinds of factors present in organizations: factors which contribute to job satisfaction (motivation factors) and factors which cause job dissatisfaction (hygiene factors). Typical motivation factors involve recognition at work, increased responsibility, advancement opportunities, learning and achievement. Hygiene factors include threats to job insecurity,

unpleasant working conditions, unfair salary or company policies. Furthermore, the two types of factors are not opposed to each other but instead complete each other. According to the Two-Factors Theory, employees will consider acting on their turnover intention when factors affecting their overall satisfaction will be negatively influenced. Thus, retention strategies' aims should focus on optimizing motivation factors in order to reduce turnover intentions (Herzber, 1971; Chu & Kuo, 2015; Ngo-Henha, 2017).

The Resource-Based View Theory (RBT). Barney's (1991) RBT defines the firm's resources and characteristics to gain competitive advantage and thus position above the competition. According to Armstrong & Shimizu (2007), a resource should be valuable if it contributes to better output and efficiency. Hence, consistent with the RBT, employees keep their current job as long as they feel valued and observed as a scarce resource, enabling the firm to gain a competitive advantage. In other way, employees will "become receptive to turnover intention appeals" (Ngo-Henha, 2017, p. 2755).

2.3.1 Factors influencing turnover intention

Many scholars have researched the topic of turnover intention and its causes throughout the past decades, and conclusions seem to synchronize.

In the attempt to find the main reasons which motivate employees to leave their job, Harkins (1998) argues that dissatisfiers drive the intention to turnover: "Employees feel obliged to leave to achieve unmet satisfiers". Following this idea, he proposes five main reasons why employees decide to turnover. First, the confidence factor defines how an organization is perceived from the inside. Employees might not always understand the organization's strategy and long-term goals regarding its mission and economic health. Thus, it is crucial for an employee to keep his confidence, or otherwise, he will become responsive to turnover appeals and turn to organizations where the focus is straightforward. Second is the emotional factor. This refers to fulfilling an employee's needs, such as rewards, recognition and the presence of development opportunities, to prevent him from leaving. Third, the trust factor is described by psychologists as a phenomenon of transference, the ability of a person to care for another person. Trust is usually a vital component of a working environment which needs to be shown by both employer and employee. Once promises are broken, commitments are not kept, and loyalty is ruined, the grounds supporting the trust paradigm are also broken. Fourth is the fit factor. Work

relationships are essential, especially when working with teams, where the feeling of mutual appreciation is desired. Employees need to feel like they fit within an organization and that their values and principles are aligned with the ones of the organization. Last is the listening factor, whose existence is imperative for employees. Accordingly, this is one of the most frequent reasons for leaving a job. The employer's inability to make the employee feel heard and the lack of clear communication of work requirements and expectations is often exhausting for employees. Thus, turnover intentions begin to rise (Harkins, 1998).

Leadership style. Leadership style refers to a manager's behaviour towards his employees and subordinates and the approach to exercising the leadership function. Dependent on how a manager chooses his leadership style or behaves at the workplace, employees feel motivated to achieve the organization's goals (Ng'ethe et al., 2012; Belete, 2018). According to Siew (2017), leadership style and turnover intentions are very strongly related to each other. Additionally, scholars found that employees who worked for autocratic leaders were more inclined to quit their jobs than those who worked for democratic leaders. The main reason for this behaviour lies in the fact that an autocratic leadership style focuses more on production and less on people, whereas the democratic leadership style focuses on a collective decision-making approach (Puni et al., 2016; Belete, 2018). Hom et al. (2020) also classify leadership style as a strong predictor of employee turnover. Accordingly, the leadership style or leader-member exchange defines the interdependence between superiors and subordinates. It reflects certain benefits, such as influence on decision-making, which contribute to an upbeat leadership style and, thus, reduced employee turnover.

Job satisfaction. Throughout the literature, job satisfaction is one of the most prominent variables when analyzing turnover intentions. According to Belete's (2018) review, job satisfaction proved to be one of the strongest and most significant predictors of employee turnover intentions. Ali (2008) proved that there is a substantial negative relationship between job satisfaction and turnover intention among employees. Park and Kim (2009) argue that there is a strong negative relationship between job satisfaction and turnover intention and that job satisfaction is shaped by the promoted culture within the organization. Therefore, a culture that prioritizes and continuously advocates for teamwork, trust, morale, and leadership and often uses terms such as "family" and "empowered" proved positively related to job satisfaction. According to further research, job satisfaction proved to be a strong determinant of turnover intentions, and dissatisfied and frustrated employees are more likely to quit their jobs (Arshad & Puteh, 2015). Hom et al. (2020) also identify job satisfaction as one of the most researched

and strong predictors of employee turnover. Accordingly, employees are satisfied when their initial expectations regarding their experiences at the workplace are met. Once satisfied, they tend to keep their employment. Carmeli and Weisberg (2006) concluded in their research that job satisfaction is negatively associated with turnover intentions, and accordingly, dissatisfied employees are more likely to consider other job opportunities. Moreover, the literature suggests that intrinsic factors such as routine, job complexity and job autonomy are stronger than extrinsic factors when anticipating job satisfaction and, thus, turnover intentions. Gunadi et al. (2021) argue that keeping employees satisfied with their work is a crucial priority for the success of all businesses. “A huge scale of worker satisfaction is directly correlated to a lower turnover rate” (Gunadi et al., 2021, p. 20). Furthermore, pleasant work has an impact on employees’ attitudes in deciding whether they keep their job or not. Another study concluded that to “reduce employee turnover intention, a higher level of job satisfaction is needed, which could be fulfilled by providing rewards, welfare, work itself and direct experienced by employees” (Singh & Sant, 2021, p.110). According to Girma (2019), employees usually express their attitude towards their job and their dissatisfaction in many ways, among which, neglecting tasks at the workplace and quitting their job. However, job satisfaction respectively dissatisfaction depends on employees’ attitudes. Employees with positive attitudes are more likely to be satisfied, while employees with negative attitudes, in general, are more likely to be dissatisfied with their job (Girma, 2019).

Promotion opportunities and salary. Promotion opportunities refer to the advancement of an employee to a higher position within the organization. The higher position automatically involves greater responsibilities, higher salary and higher status. Such opportunities, along with other significant factors such as job satisfaction, proved to shape the turnover intentions among employees (Hassan, 2014; Belete, 2018). Biswakarma (2016) also found that promotion speed and remuneration growth had a very high and direct impact on employees’ turnover intentions (Belete, 2018). Moreover, perceived career opportunities outside the organization’s boundaries played an essential part in employees’ decisions to quit their job, especially when career advancement opportunities were lacking at their current job (Belete, 2018). The increase in income is the main goal of every employee; thus, employees will not seek to work for a particular organization if the salary does not meet their financial and material expectations. Salary has, therefore, a very high impact on retention and turnover intentions and represents a determinant factor when accepting a job (Belete, 2018). According to Gunadi et al. (2021), the wage is the best way to compensate for the time and effort employees devote to the workplace.

Hence, if the compensation paid by the organization meets the employees' needs and expectations, job satisfaction will boost, and turnover intentions will diminish.

Organizational culture. The set of shared values, beliefs and goals consolidate the organizational culture, which needs to align with the values of its employees in order to create an agreeable work environment for employees. Organizational culture strongly impacts employee commitment, job satisfaction, retention and thus, turnover intentions (Habib et al., 2014). Moreover, an organizational culture that grants appealing jobs decreases "employee's absenteeism and withdrawal intentions from the occupation, job and the organization" (Carmeli, 2005; Belete, 2018, p. 3). According to Girma (2019), the organizational culture, which shapes the way of doing business within an organization, can be divided into three main parts: bureaucratic, innovative and supportive. Based on which organizational culture type is implemented, employees become more effective at work and aware of their objectives. This idea plays a vital role in recruiting, managing, motivating, developing and retaining employees. Kim et al. (2017) argue that an authoritarian organizational culture which is defined as more directive/controlling, less participative and one-way communicative, is likely to cause high turnover rates among employees and even be seen as a so-called "turnover culture" (Kim et al., 2017, p. 313). Park and Kim (2009) concluded in their study that organizational culture has a direct impact on turnover intentions among employees and that the relationship between these two variables was mediated by job satisfaction.

Organizational commitment. Organizational commitment refers to an employee's belief and acceptance of an organization's goals and values, the willingness to put in effort for their job in order to achieve the company's goals and the eagerness to belong to the organization (Belete, 2018). Scholars have concluded that organizational commitment is negatively related to employees' turnover intentions (Lin & Chen, 2004) and are a strong predictor of employee turnover intentions (Ahuja et al., 2007; Griffeth et al., 2000). In their book on employee retention and turnover, Hom et al. (2020, p. 50) argue that organizational commitment proved to be significantly related to turnover and is also one of the most widely studied predictors of turnover. Thatcher et al. (2002) also argue that committed employees show a lower turnover intention because they want to keep their job. Accordingly, organizational commitment mediates the influence of attitudes, affective beliefs and job characteristics on turnover intentions and hence, on actual turnover. Additionally, organizational commitment is more stable compared to more specific variables like job satisfaction. While job satisfaction may oscillate between daily incidents and change depending on different circumstances,

organizational commitment “reflects employees’ enduring beliefs about their employer that develop gradually over time” (Thatcher et al., 2002, p. 233).

Organization-employee relationship quality. The quality of the relationship between the organization and the employee has been frequently researched, especially in association with organizational commitment and organizational support (Kim et al., 2017). Accordingly, employees who perceive high organizational support from their employer will have positive job attitudes or behaviour at work and thus will not be tempted to turn over (Loi et al., 2006; Kim et al., 2017). Kim et al. (2017) argue that organization-employee relationship quality and organizational justice are strong predictors of employee turnover intentions. Moreover, the organization-employee relationship is a crucial concept in corporate communication and public relations in order to understand and predict employees’ behaviours. Thus it is vital to consider it as a leading predictor of employee turnover intentions.

Organizational justice. Organizational justice refers to the different perceptions of fairness of behaviours in an organization and the behavioural responses to those perceptions of different individuals. It is defined as a broad concept which is associated with nondiscrimination and fair acknowledgement of dissimilarities in the workplace (Sokhanvar et al., 2016). Therefore, employees are satisfied, committed and loyal if the organization is fair in its way of operating and hence, tend to keep their jobs in such organizations. Organizational justice and the turnover intentions of employees are significantly correlated, meaning that fair justice applied by managers will lead to low turnover intention among employees (Aghaei et al., 2012; Belete, 2018). Kim et al. (2017) also demonstrate a strong relationship between turnover intention and organizational justice and add that supervisory justice is also an important aspect to consider because it influences an employee’s perception of organizational justice. Furthermore, injustice may not only come from the organization but from supervisors as well. Exchanges between employees and their supervisors proved to impact employees’ engagement, commitment, and retention and thus their turnover intention (Kim et al., 2017).

Among other factors which were less analyzed, scholars include job stress, another predictor of turnover intentions. Role ambiguity, role conflicts, work overload or a poor work-life balance, will create stress at the workplace and augment employees’ intentions to leave (Belete, 2018). Stress is a destructive characteristic of the working environment which causes drops in an employee’s performance and job absenteeism. Job stress is a factor which also negatively impacts job satisfaction and thus causes employees’ turnover intentions to increase (Arshad &

Puteh, 2015). Work-life balance is another critical factor to consider when deciding to leave a job, mainly because there are situations when work-family conflicts could arise. Employees' likelihood to leave or keep a job is quite influenced by commitments to family pressures, community issues or other non-work-related activities (Arshad & Puteh, 2015). Winata and Martdianty (2022) argue that a supportive work environment directly impacts turnover intentions.

Additionally, a supportive work environment can enhance the organization-employee relationship quality and the organizational engagement shown by employees, thus reducing turnover intentions. Similar to organizational commitment, organizational engagement refers to employees' dedication to giving the best effort in order to achieve the organization's goals. Accordingly, engagement directly affects the organization and has the power to reduce turnover intentions (Winata & Martdianty, 2022).

2.3.2 Turnover Consequences

While the vast majority of papers focus on depicting the causes that lead employees to the intent to turnover, it is substantial to briefly observe the consequences of such an action from both points of view: the leaver and the organization.

Employees who quit their job often obtain higher wages at their new job, will probably satisfy most of their dissatisfiers, may be employed in more attractive climates and achieve a better work-life balance. Leavers may welcome the opportunity of switching careers, freelance or returning to school (Hom et al., 2020). Still, there are also negative consequences employees may face when deciding to turn over. These consequences include loss of seniority and fringe benefits, transition stress in a new job, relocation costs and disruption to spouses' careers. Researchers have argued that factors like fringe benefits, pension and healthcare coverage are key elements in deciding whether to leave and if they are advantageous, they usually deter turnover (Hom et al., 2020). Quitters tend to encounter stress at the new job if the new employer fails to satisfy their expectations. Repeating basic socialization tasks at the new workplace, learning new work practices and winning acceptance from new colleagues may become a source of stress. Due to geographic relocation, if applicable, there often occur relocation costs which are usually carried out by leavers. Besides the financial costs, relocating may also affect leavers' families because they may lose valued community services such as good schools. Furthermore, leavers' working spouses may also have to suffer from an eventual relocation.

Studies proved that employees often declined promotions that implied their relocation to avoid threatening their spouse's career (Hom et al., 2020).

From the organization's perspective, employee turnover causes high costs. Those costs imply tangible and intangible costs. Tangible costs include "HR staff and management time to conduct exit interviews, occurred benefits to be paid out, and temporary coverage or overtime to maximize work disruption" (Hom et al., 2020, p. 24). Intangible costs comprise "loss of customers or clients, teamwork disruptions, decreased performance or quality, loss of organizational memory, diminished diversity, contagion to other employees, and even direct competition from leavers" (Hom et al., 2020, p. 24). Nonetheless, the cost saving can be achieved by hiring a replacement with less experience. The left vacancy may create transfer or promotion opportunities for other employees. The replacement could be a better talent who could enhance workplace diversity. Turnover also creates the opportunity to infuse new skills or creativity into the organization (Hom et al., 2020).

III. Methodology

3.1 Hypotheses Development

As presented in the theoretical background, the evolution of new digital technologies has tremendously impacted the workplace and the working environment activities. Wheatear new technologies enhanced the execution of routine tasks or eased the processes of more complex functions; employees generally perceived new technologies as positive. Even though the perks of digital technologies development are undoubtful, the existence of caused detriments can lead to concerns, which lie at the bottom of multiple debates within the existing literature. As reviewed above, the introduction of new technologies at the workplace generally produced positive outcomes and resulted, among other things, in reduced employee turnover. Multiple studies have similar conclusions regarding the negative association between digital transformation and new technology increase in the working environment and employees' turnover intentions (Li et al., 2019; Trenerry et al., 2021; Alieva & Powel, 2023). Thus, the first hypothesis was formulated as follows:

Hypothesis 1: Digitalization decreases employees' turnover intention.

A considerable part of the theoretical background focuses on both the effect of digitalization on job satisfaction and the effect of job satisfaction on employee turnover intentions. Researchers have found evidence to confirm the existence of both effects. Digitalization has a positive effect on job satisfaction (Cijan et al., 2019; Eickemeyer et al., 2021; Bolli & Pusterla, 2022), and job satisfaction proved to be one of the strongest predictors of employees' turnover intentions (Carmeli & Weisberg, 2006; Ali, 2008; Park & Kim, 2009; Arshad & Puteh, 2015; Belete, 2018; Hom et al., 2020; Gunadi et al., 2021). This is consistent with the definition of a mediating variable (Bhandari, 2022); thus, job satisfaction can play the role of such a variable. Furthermore, a substantial amount of studies consider indeed job satisfaction as a mediating variable between a specific independent variable and turnover intentions (Han & Jekel, 2011; Özbağ & Ceyhun, 2014; Feng et al., 2017). Hence, similar to other research, the aim is to control whether job satisfaction explains the process through which digitalization and turnover intentions are related or not:

Hypothesis 2: Job satisfaction mediates the relationship between digitalization and employees' turnover intention.

3.2 Research Model

As illustrated in Figure 1, digitalization is the independent variable, turnover intention the dependent variable of the model and job satisfaction plays a mediation role between the two.

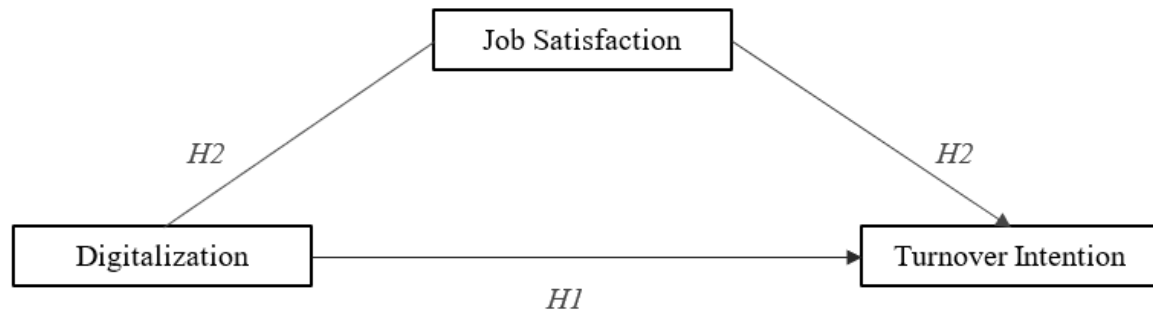


Figure 1. Mediation Model

3.3 Research Method

After the in-depth analysis of the relevant literature and the development of the hypotheses and the research model, a description of the chosen research method will be introduced. In order to test the hypothesis, the collected numerical data will be interpreted within an accurate statistical analysis. There are multiple reasons for choosing a quantitative research method. Along with the advantage of establishing generalizable facts about the researched topic, it is an appropriate approach based on statistical analysis, which allows one to confirm or reject what has been hypothesized (Bhandari, 2022).

As one of the most frequently used data collection tools, a survey consists of relevant questions for answering the research question and testing the hypotheses. Given the numerous computer-aided statistical programs which exist nowadays, the survey method gained higher prevalence as the processing and analysis of the collected data became more uncomplicated. A survey allows for collecting a large quantity of data by asking the same questions, which makes this method energy-saving, with more accurate data, and with an increased external degree of research validity and level of sample representation (Gürbüz, 2017).

In order to gather information and collect relevant data, a pretested online survey has been conducted. The survey has been developed in Qualtrics Experience Management, for which the University of Vienna provided a license through the Department of Marketing. The survey

has been tested to reduce compatibility issues for both desktop and mobile versions. To reach individuals, an anonymous link¹ has been shared via multiple channels such as LinkedIn, Facebook groups, WhatsApp groups or E-Mail. As the thesis aims to assess the digitalization of the working environment and the resulting turnover intentions, a short description at the beginning of the survey states that the questionnaire is addressed to employed individuals. The same description was used whenever the link was shared on social platforms. In order to achieve a higher response rate, individuals from both Austria and Germany were targeted. The survey was built to be short, accurate and concise, with a completion time of approximately 5 minutes. The survey link was active for a time frame of three weeks between the 23rd of January 2023 and the 13th of February 2023.

3.4 Survey Design

Given the aim of the thesis, respectively, to determine the relationship between the relevant variables, the chosen analytical survey via the Internet was the most suitable approach for data collection. The online survey method is a low-cost way of fast data collection, which is not affected by faulty public opinion as it does not feature a pollster (Gürbüz, 2017).

The online survey consisted of four question blocks and an introductory description which can be found in Appendix A. The first block comprised demographic questions regarding age, gender, country of employment, highest education level, the industry of activity, and respondents' tenure in both industry of employment and current job. Besides the demographic questions, which were formulated as multiple choice questions with a single possible answer, the other three blocks used a 5-point Likert scale as answer type (1= "strongly disagree" to 5= "strongly agree").

The second block's focus was the measuring of digitalization in the working environment. In order to assess this variable, three questions were used, each comprising of two to four items. First, the attitude towards the digital transformation of the workplace was measured through three items developed by Venkatesch et al. (2003) and adapted by Meske & Junglas (2021) in their research. The second question consisted of two items which measured the attitude towards new technology. After reading the short introduction stating that new technologies (e.g. computers, robots) are being introduced in the country, respondents rated their assessment

¹ https://wiwiunivie.qualtrics.com/jfe/form/SV_2sOOrNRa8yC1Lme

regarding the consequences of the new technology on future jobs ranged from 1= "greatly reduce the number of jobs" to 5= "greatly increase the number of jobs". The next item focused on the effect of the new technologies on work itself, rated from 1= "much less interesting" to 5= "much more interesting". The question with both items was adapted from the research of Elias et al. (2012). For measuring digitalization, employees' attitude was chosen "because employee attitude is a key variable that must be considered in order to explain and predict the degree of success of technological change in an organization" (Gurtoo & Tripathy, 2000, p. 520). The third question, with four items, also measured digitalization through the use of information technology and communication systems at the workplace. The items which were derived from the studies of Sun & Teng (2012) and Sun (2017) and adapted by Zeshan et al. (2021) in their study of employees' digitalization let the respondents rate their reliability and dependability on corporate information systems.

The third block consisted of a question which measured the job satisfaction. The five items used in this question were first developed by Brayfield & Rothe (1951) and retrieved from the adapted version of Judge et al. (1998) and Teng et al. (2022). As mentioned, the same 5-point Likert scale was used for respondents' ratings. Since two items were negatively phrased, the response scale was reverse-scored for those items.

The fourth block constituted the final question regarding employees' turnover intention. The last question consisted of 3 items developed by Robinson (1996) and later adapted by Neves (2009). All three items are consistent with Carmeli & Weisberg's (2006) propositions of the three phases of the intention to turnover: the thoughts of quitting, the intention to search for another employment and the actual intention to quit.

3.5 Data Analysis

The survey reached a total of 146 recorded responses; however, after removing incomplete responses and cleaning the dataset, the final sample consisted of 138 observations. For the description of the results as well as for the data analysis, IBM SPSS Statistics 28 was used.

In order to understand the relationship between the independent and dependent variables, a simple linear regression analysis is conducted. The regression analysis is a statistical procedure that aims to predict a variable from one other or more other variables. The relationship between the independent and dependent variables is quantified through the regression analysis. Briefly,

regression analysis tests how the dependent variable changes when the value of the independent variable changes while keeping the other variables constant (Darlington & Hayes, 2016).

For the mediation analysis, Hayes's (2017) PROCESS macro will be used as an extension plug-in for SPSS. The PROCESS macro uses simple linear regression to conduct the mediation analysis and bootstrapping to estimate the mediation effects. *Bootstrapping* is a leading approach used in different statistical procedures. This method is used for testing the significance of the indirect effect in mediation. According to the literature, bootstrapping has a high statistical power and can control very well for first-type errors. The significant advantage of the bootstrapping method is that it is independent of the distributional properties of the used dataset and therefore grants reliable results even for non-normally distributed variables (Hayes, 2009). When data is collected, a draw from the population is selected and represents a sample which is assumed to be representative. Bootstrapping is based on building a sampling distribution by resampling from the given data. The collected dataset serves as the population, and bootstrapping draws samples with backtracking. Statistics are being calculated for each bootstrap resampling sample. The assumptions of the mediation analysis are similar to those that apply to the multiple linear regression, namely linearity, normal distribution of residuals, homoscedasticity and interdependence. According to Hayes (2017), testing for these assumptions is not as necessary and essential as expected. "[...] I do not believe you should lose too much sleep over the potential that you have violated one or more of those assumptions. Most likely, you have, even if statistical tests of the assumptions you might employ say otherwise. Statistical models are tools we use to help us understand our data, and they can give us insights that are only approximations of reality" (Hayes, 2017, pp. 68-69).

Therefore, the PROCESS macro simplifies the mediation analysis through bootstrapping, which is a robust procedure and generally does not make any assumptions about the distribution properties of the data.

IV. Results

4.1 Descriptive Statistics

4.1.1 Demographics

What is your age?

	Frequency	Percent	Cumulative Percent
18-24	6	4,3	4,3
25-34	104	75,4	79,7
35-44	17	12,3	92,0
45-54	9	6,5	98,6
55 or more	2	1,4	100,0
Total	138	100,0	

Table 1. Age Groups

Out of the total sample of 138 observations, more than 100 respondents (74,4%) were from the 25-34 years old category. 17 respondents (12,3%) were between 35 and 44 years old, followed by a few respondents of the remaining categories, respectively 9 (6,5%) from 45-55, 6 (4,3%) from 18-24, and only 2 (1,4%) were 55 or more.

What is your gender?

	Frequency	Percent	Cumulative Percent
Male	56	40,6	40,6
Female	81	58,7	99,3
Prefer not to say	1	,7	100,0
Total	138	100,0	

Table 2. Gender

58,7% of the respondents were females, 40,6% were male, and 1 (0,7%) respondent preferred not to say which gender they are.

In which country are you currently employed?

	Frequency	Percent	Cumulative Percent
Austria	95	68,8	68,8
Germany	43	31,2	100,0
Total	138	100,0	

Table 3. Country of employment

Out of the final sample, 95 respondents (68,8%) were employed in Austria and 43 (31,2%) in Germany.

What is the highest degree or level of education you have completed?

	Frequency	Percent	Cumulative Percent
High school degree or equivalent	13	9,4	9,4
Bachelor's degree or equivalent	52	37,7	47,1
Master's degree or equivalent	65	47,1	94,2
PhD or equivalent	8	5,8	100,0
Total	138	100,0	

Table 4. Level of education

The final sample consisted of 65 (47,1%) respondents with a Master's degree or an equivalent, 52 (37,7%) individuals with a Bachelor's degree or an equivalent, 13 (9,4%) individuals indicated they had a High school degree or an equivalent and 8 (5,8%) respondents obtained a PhD or an equivalent diploma.

In which industry are you currently employed?

	Frequency	Percent	Cumulative Percent
Construction & Real Estate	7	5,1	5,1
Financial & Insurance activities	17	12,3	17,4
Industry	10	7,2	24,6
Information Technology & Communication	35	25,4	50,0
Public Administration, Defence, Education, Human Health and Social Work	19	13,8	63,8
Wholesale & Retail Trade, Transportation, Accommodation & Food	10	7,2	71,0
Other	40	29,0	100,0
Total	138	100,0	

Table 5. Industry of employment

As shown in Table 5, the frequencies in employment industries were distributed as follows. 40 (29%) respondents of the final sample stated they are employed within another industry as the ones listed above, 35 (25,4%) individuals were employed within the Information Technology & Communication industry, 19 (13,8%) respondents worked in the Public Administration, Defence, Education, Human Health or Social Work industry, 17 (12,3%) respondents were employed in the Industry of Financial & Insurance activities. The industrial sector, as well as the Wholesale & Retail Trade, Transportation, Accommodation & Food industries, each employed 10 (7,2%) of the total sample. The remaining 7 (5,1%) respondents worked across Construction & Real Estate.

What is your tenure in the industry in which you are currently employed?

	Frequency	Percent	Cumulative Percent
12 months or less	17	12,3	12,3
1-3 years	52	37,7	50,0
4-6 years	38	27,5	77,5
7-10 years	12	8,7	86,2
more than 10 years	19	13,8	100,0
Total	138	100,0	

Table 6. Tenure in the industry of employment

Most respondents (52, respectively 37,7%) had a tenure of 1-3 years in the industry they were currently working in. 38 (27,5%) respondents stated a tenure of 4-6 years, and 19 (13,8%) individuals from the sample had more than 10 years of tenure within the current employment industry. 17 (12,3%) individuals gained a tenure of 12 months or less, and the rest of the 12 (8,7%) respondents held a tenure of 7-10 years within the industry they worked in.

What is your tenure in the current job?

	Frequency	Percent	Cumulative Percent
12 months or less	40	29,0	29,0
1-3 years	62	44,9	73,9
4-6 years	22	15,9	89,9
7-10 years	5	3,6	93,5
more than 10 years	9	6,5	100,0
Total	138	100,0	

Table 7. Tenure in the current job

A total of 62 (44,9%) respondents indicated they had tenure in their current job of 1-3 years. 40 (29%) of the respondents had a tenure of 12 months or less, and 22 (15,9%) individuals stated a tenure of 4-6 years in their current job. 5 (3,6%) respondents held a longer tenure of 7-10 years, and 9 (6,5%) individuals held a tenure of more than 10 years in their current job.

4.1.2 Digitalization

Attitude towards digital transformation

	To digitally transform the workplace is a good idea.	I would like to work in a digitally transformed work environment.	A digitally transformed workplace would make my work more interesting.
Strongly disagree (1)	1	1	2
Disagree (2)	2	3	8
Neutral (3)	10	16	28
Agree (4)	65	62	60
Strongly agree (5)	60	56	40
Total	138	138	138
Mean	4,31	4,22	3,93
Std. Deviation	,733	,792	,925

Table 8. Frequencies - Attitude towards digital transformation

The vast majority (90,6%) agree or strongly agree that transforming the workplace digitally is a good idea. Only 3 (2,1%) respondents disagree or strongly disagree regarding the same statement. 85% of respondents would like to work in a digitally transformed work environment by checking either agree or strongly agree with this item. 2,9% of the sample disagrees or strongly disagrees with the same item, and the remaining 11,6% are neutral regarding the likelihood of working in a digitally transformed workplace. 72,5% agree or strongly agree that a digitally transformed workplace would make their work more interesting. 7,2% of respondents disagree or strongly disagree with the same item. On average, 82,7% of the sample agrees or strongly agrees with the three items measuring the attitude towards digital transformation. 4,2% of the sample showed a negative response towards digital transformation on average. The remaining 13,1% show, on average, a neutral attitude.

Attitude towards new technologies

	Over the next few years, I think these new technologies will...
greatly reduce the number of jobs (1)	6
reduce the number of jobs (2)	54
neither reduce nor increase the number of jobs (3)	57
increase the number of jobs (4)	21
greatly increase the number of jobs (5)	0
Total	138
Mean	2,67
Std. Deviation	,785

Table 9. Frequencies - Attitude towards new technologies (1)

The majority, 41,3% of respondents, stated that introducing new technologies would neither increase nor decrease the number of jobs in the future. 43,4% of the sample stated that new technologies would reduce or greatly reduce the number of jobs in the future. Only 15,2% of respondents implied that the number of jobs would increase due to introducing new technologies in their countries. None of the respondents stated that introducing new technologies would greatly increase the number of jobs.

	I think that the introduction of new technologies over the next few years will make work...
much less interesting (1)	0
less interesting (2)	9
neither (3)	28
more interesting (4)	85
much more interesting (5)	16
Total	138
Mean	3,78
Std. Deviation	,732

Table 10. Frequencies - Attitude towards new technologies (2)

73,2% of respondents stated that due to new technology, work would become more or much more interesting. 20,3% were neutral, and a small number of individuals considered work to become less interesting after the introduction of new technologies in their country. None of the respondents from the sample marked work becoming much less interesting due to new technologies.

Use of Information Technology on the Job

	I rely on corporate Information Systems (IS) extensively for solving problems in my job.	I depend on corporate IS extensively to carry out my job responsibilities.	Corporate IS is really indispensable for my work.	Without corporate IS, it would be very difficult for me to do my job.
Strongly disagree (1)	6	5	9	6
Disagree (2)	15	21	20	20
Neutral (3)	27	27	23	29
Agree (4)	64	63	60	49
Strongly agree (5)	26	22	26	34
Total	138	138	138	138
Mean	3,64	3,55	3,54	3,62
Std. Deviation	1,045	1,047	1,147	1,136

Table 11. Frequencies - Use of Information Technology on the Job

65,2% of respondents agree or strongly agree that they rely on corporate IS in their job. 61,6% of individuals agree or strongly agree that they depend on corporate IS to carry out their work responsibilities. For 62,3% of the total sample, corporate IS is indispensable at work, and 60,1% agree or strongly agree that without corporate IS, doing their job would be very difficult. On average, 62,3% of the final sample use information technology and systems at their workplace. Only an average of 18,5% of respondents disagreed or strongly disagreed, indicating they do not base their work on corporate IS.

4.1.3 Job Satisfaction

Job Satisfaction

	I feel fairly well satisfied with my present job.	Most days I am enthusiastic about my work.	I find real enjoyment in my work.
Strongly disagree (1)	3	4	2
Disagree (2)	8	14	13
Neutral (3)	26	35	36
Agree (4)	76	68	67
Strongly agree (5)	25	17	20
Total	138	138	138
Mean	3,81	3,58	3,65
Std. Deviation	,876	,934	,893

Table 12. Frequencies - Job satisfaction (1)

	Each day of work seems like it will never end.	I consider my job rather unpleasant.
Strongly agree (1)	3	2
Agree (2)	3	17
Neutral (3)	27	32
Disagree (4)	57	65
Strongly disagree (5)	48	22
Total	138	138
Mean	3,64	4,04
Std. Deviation	,943	,911

Table 13. Frequencies - Job satisfaction (2)

On average, 67% of respondents are satisfied with their job showing a positive response regarding their job, their enthusiasm and their enjoyment at the workplace. An average of 10% of the sample showed negative responses indicating their dissatisfaction with their present job.

4.1.4 Turnover Intention

Turnover Intention

	If I have an opportunity, I will change jobs.	I am actively looking for a new job.	If I could choose, I would rather work in a different organization.
Strongly disagree (1)	8	39	26
Disagree (2)	37	60	43
Neutral (3)	43	24	37
Agree (4)	41	13	23
Strongly agree (5)	9	2	9
Total	138	138	138
Mean	3,04	2,12	2,61
Std. Deviation	1,031	,978	1,162

Table 14. Frequencies- Turnover Intention

Only 15% of the sample showed positive responses regarding their turnover intention. 50% of the respondents disagreed or strongly disagreed when asked if they would work for another organization should they be able to choose. Only 10,8% of the sample is actively looking for a job, and 36,2% responded positively when asked whether they would change jobs if given the opportunity. On average, 51,5% of the total sample showed negative responses to turnover intentions.

4.2 Statistical Analysis

4.2.1 Reliability Analysis

The independent variable, Digitalization, was measured through three separate constructs. Digitalization was created as a composite variable, as a mean of 9 items referring to the three constructs (SD=0,63, M=3,70). To justify whether it is suitable to construct a composite variable or if the chosen variables are appropriate for building a composite variable, internal consistency reliability could be estimated through Cronbach's alpha for the subsets of the variables. Thus, Cronbach's alpha was calculated to assess the internal consistency of the likert subscale for positive affect. The same calculation was also carried out for the dependent variable, Turnover Intention (TOI) and the mediating variable, Job Satisfaction (JS). The internal consistency of the items used for measuring the model's variables is fulfilling, with Cronbach's alpha for positive affect, each exceeding the 0,80 threshold of a good fit.

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Digitalization	,843	,834	9
Job Satisfaction (JS)	,897	,898	5
Turnover Intention (TOI)	,839	,841	3

Table 15. Reliability Analysis

4.2.2 Regression Analysis

To test the first hypothesis, a linear regression analysis was conducted. The dependent variable here was TOI, and the independent variable was Digitization. In addition, selected socio-demographic information was included in the model as possible confounding variables. These variables were age, gender, education, country of employment and job tenure. Industry of employment and, therefore, industry tenure was not considered as a covariate as the majority of the sample indicated “other” as the industry they are currently employed in. Thus, the tenure in the industry was also omitted. The regression analysis was computed as follows. In the first model, only the influence of the socio-demographic variables was estimated. In the second model, the independent variable digitalization was added to determine how much additional variance is explained by the independent variable to the covariates. In addition, before interpreting the results, all necessary conditions for regression analysis were checked.

A scatter plot of the studied residuals and the predicted values determined whether homoscedasticity was given. It was shown that the data are randomly scattered. No funnel or other clusters can be seen, so this condition is assumed to be fulfilled. The absence of autocorrelation was assessed via the Durbin-Watson value, which should be close to 2 in order to assume zero autocorrelation. In this case, the value was 1.91 for the calculated regression analysis, which is also considered to be a good fit. The residuals were tested for normal distribution using a Shapiro-Wilk test, which was not significant, $p = .481$, so this condition is also assumed to be fulfilled. As the first model with the covariates included several factors, it was checked whether there was any multicollinearity among them: The variance inflation factor was around 1 for all variables and is thus classified as inconspicuous. The Cook values were calculated to check whether there were any outliers in the model. Since no Cook value was above 1, no outliers were observed. Therefore, the necessary conditions for calculating and interpreting a linear regression analysis are fulfilled for the present model. The stated results can be observed in the tables and graphs added in Appendix B.

The first model was significant with all covariates, $F(5,131) = 3.06$, $p < .05$. According to the adjusted R^2 , the covariates could explain a total of 7% of the variance in the TOI. The second model, in which the independent variable was added, was also significant, $F(6,130) = 2.53$, $p < .05$. The addition of the digitalization did not explain any additional variance in the TOI, the adjusted $R^2 = .063$, showing that model 2 could explain a total of 6.3% of the variance in the TOI. As can be seen from the exact coefficient values, digitalization was not a significant predictor of turnover intentions, $b = 0.01$, $p = .975$. Among the covariates, only

Education was observed to have a significant and negative impact on TOI, $b = -0.29$, $p < .01$, meaning that the higher an employee's education level, the lower the intention to quit the job among the sample. Table 16 summarizes all the relevant statistics of the two models.

Coefficients^a

Model	F	Adj. R Square	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
			B	Std. Error	Beta			
1	3,06	,070						
(Constant)			3,805	,369			10,304	<,001
Age			-,228	,134	-,176		-1,703	,091
Gender			-,190	,155	-,103		-1,228	,222
Country of employment			,022	,165	,011		,132	,895
Education			-,287	,105	-,232		-2,725	,007
Job Tenure			,043	,087	,051		,497	,620
2	2,53	,063						
(Constant)			3,792	,556			6,817	<,001
Age			-,228	,135	-,176		-1,693	,093
Gender			-,190	,156	-,103		-1,222	,224
Country of employment			,022	,165	,011		,131	,896
Education			-,287	,106	-,232		-2,714	,008
Job Tenure			,043	,087	,051		,494	,622
Digitalization			,004	,122	,003		,032	,975

a. Dependent Variable: Turnover Intention

Table 16. Regression coefficients

4.2.3 Mediation Analysis

Hypothesis 2 was tested via a mediation analysis in PROCESS. Since Education was found to be the only significant covariate in the regression model, it was also considered as a covariate in the mediation analysis. For a detailed SPSS output matrix, please see the Appendix C. The following table summarises the results of all variables.

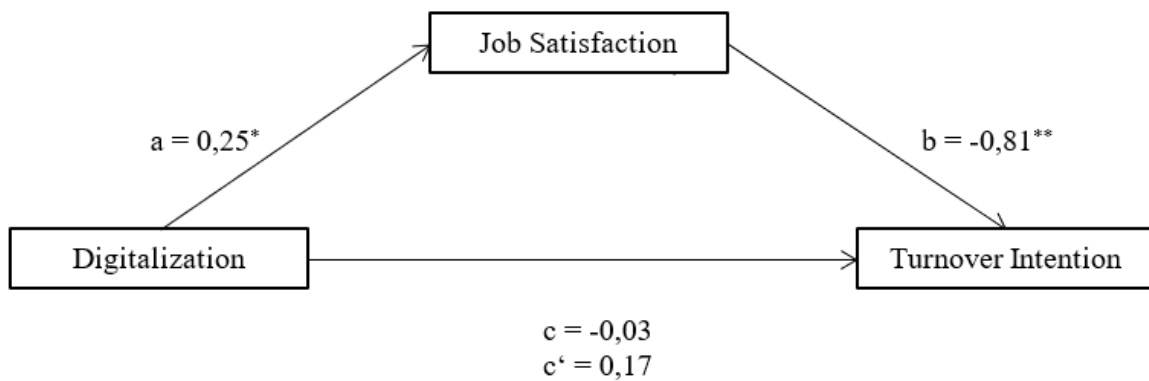
Mediation coefficients

		Unstandardized Coefficients				
	F	R Square	B	Std. Error	t	Sig.
DV:						
JS	10,04	,112				
(Constant)			2,153	,439	4,911	,000
Digitalization			,248	,113	2,195	,029
Education			,271	,079	3,433	,008
DV:						
TOI	36,34	,462				
(Constant)			5,186	,442	11,727	,000
Digitalization			,168	,092	1,831	,069
JS			-,812	,085	-9,565	,000
Education			-,071	,070	-,788	,432

Table 17. Mediation coefficients

Digitalisation had a significant influence on the potential mediator job satisfaction, $a = 0,25$; $p < ,05$, which turned out to be positive. The more positive digitalization was, the more positive was the respondents' reported job satisfaction. Education also showed a significant effect on job satisfaction $B = 0,27$; $p < ,001$, meaning that a higher education level leads to higher job satisfaction among the sample. The potential mediator also showed a significant negative influence on turnover intention, $b = -0,81$; $p < ,001$. Thus, job satisfaction negatively

influences turnover intention; the more satisfied the respondents are, the lower their intention to leave their job. For the digitalization, neither a statistically striking direct influence, $c' = 0,17$; $p = ,069$, nor a significant influence in the total model could be shown, $c = -0,03$; $p = ,831$. However, there was a weak indirect influence of job satisfaction, $ab = -0,20$, 95%CI[-0,39; -0,04], which was identified as significant when performing a Sobel-test, $p < ,05$. Overall, no significant direct influence of digitalization on turnover intention could be shown, but a weak mediation effect was observed. Hypothesis 2 is, therefore, accepted for the given sample. However, the observed mediation is indirect.



* $p < ,05$; ** $p < ,01$.

Figure 2. Mediation Model - Results

V. Discussion

In this section, the results from the previous chapter will be discussed, and links to existing findings and patterns will be explained. Further, the implications of the results will be described, and the limitations of the research will be acknowledged. Recommendations for future research will finally conclude this chapter.

The research aimed to determine how digitalization impacts employees' turnover intentions. The hypotheses that could be derived from the literature presumed a negative relationship between digitalization and the intention to turnover, respectively, that high digitalization scores would result in decreased intentions of employees to quit their jobs. Furthermore, the negative relationship was hypothesized to be mediated by job satisfaction. Job satisfaction was found in prior literature to be positively correlated with digitalization and strongly negatively correlated with turnover intentions. Results have shown that digitalization does not directly decrease turnover intentions. However, digitalization indirectly affects turnover intentions through the mediator variable of job satisfaction.

Contrary to the presumption of the first hypothesis, regression results showed that digitalization had no statistically significant impact on turnover intentions. Nearly no direct effect of digitalization on turnover intentions could be observed in the analysis. Therefore, the mere introduction of new digital technologies in the work environment does not cause employees to leave their job. The education level among employees showed a negative effect on turnover intentions. Hence, higher-educated respondents showed fewer turnover intentions. In this case, a potential explanation regarding education may be that a higher education level grants a particular specialization. Thus, this decreases the possible job opportunities and the number of matching jobs from the industries pool for those employees. Higher-level educated employees could also find a better job fit as they may have the exact knowledge and education that a specific job requires. Specializing in a particular domain implies a certain passion for a subject, which becomes higher if it corresponds with an individual's job tasks and goals. In this case, employees reach intrinsic motivation and high job satisfaction; thus, the intention to quit decreases.

The positive effect of digitalization on job satisfaction and the negative relationship between job satisfaction and turnover intentions were both significant and, thus, following previous findings reviewed in Chapter II. Digitalization in the work environment leads to more satisfied

employees. Separately, employees who reported higher job satisfaction showed reduced intentions to quit their job. The mediation analysis further proved a significant effect of job satisfaction, but not as a total effect in the model, meaning that the indirect-only effect describes the mediation.

5.1 Theoretical Implications

The interpretation of the results of a mediation analysis where both the total and the direct effect are found not significant, but the indirect effect turns out significant, is subject to debate in the literature. Prior scholars such as Baron and Kenny (1987) argue that a significant relationship between the independent and dependent variables is a critical starting point for mediation analysis. Accordingly, without a significant total effect of the independent variable on the dependent variable, an indirect effect cannot occur as there is no overall effect to mediate. However, in this case, both the regression analysis and the mediating analysis reported an insignificant effect of digitalization on turnover intentions. When introducing the potential mediator, the total effect must be significant before checking if the relationship between the independent and dependent variables is significant. Concisely, scholars rely upon the significance of the relationship between the independent and dependent variable to first determine whether there is a significant total effect present and hence, decide if proceeding with the examination of indirect effects is appropriate and second determine the extent and therefore the relevance of any mediation observed (Rucker et al., 2011).

Nevertheless, more recent literature questions the requirement that a total effect between the independent and dependent variables must be present to assess mediation. Hayes (2017) explains that in mediation analysis, it is actually the indirect effect that matters, not the test of individual paths in the model. While the indirect effect is acknowledged as a more precise way of assessing the relationships between the variables, the individual direct paths in the model are just separate components of the indirect path. Rucker et al. (2011) argue that significant indirect effects can occur in the absence of significant total or direct effects, as is the case for the results presented above. Therefore, a reason for detecting a significant indirect effect when both pathways c and c' are insignificant is that the statistical power for detecting c or c' can be lower than the power to detect the ab pathway. The measurement precision of paths a , b and c (such as the size of the standard error and width of the confidence intervals) can lead to differentially detectable indirect and total effects. The strength of relationships between the variables is also crucial for explaining a significant indirect effect. For example, the

independent variable could have a stronger influence on a mediator (path a) than on the dependent variable, which can also be observed in this case. Digitalization has a stronger influence on job satisfaction than on turnover intentions. This is a typical scenario where an indirect mediation effect is stronger than the total effect. Concluding mediation also depends on the sample size. The larger a sample is, the more likely it is to observe a total effect. Regressions, in general, require a large sample in order to depict statistically significant results. Furthermore, Rucker et al. (2011) suggest that the cost of a too great focus on the direct and total effect of the mediation analysis may restrict research progress, and it is essential to reveal the indirect effects in order to grant an in-depth analysis.

Further scholars also disapprove of the classic mediation criteria developed by Baron and Kenny (1986) and emphasize a new two-dimensional framework, including the direct and indirect effects of interpreting the mediation. According to Zhao et al. (2010), there is only one requirement necessary to establish mediation, and that is the indirect effect $a \times b$ should be significant. If $a \times b$ is significant and c the total effect is not significant, Zhao et al. (2010) describe this as indirect-only mediation. This type of mediation provides evidence for the hypothesized mediator and rejects the possibility of an omitted variable to occur. Thus, the indirect-only mediation provides evidence for the hypothesized mediator. Additionally, the mediator is identified as consistent with the hypothesized theoretical framework. Hence, consistent with this theory, job satisfaction can be seen as a mediator between digitalization and turnover intention even though there is a lack of direct and total effect of digitalization on turnover intentions.

5.2 Practical Implications

Based on the thesis' findings following practical/managerial implications could be expressed. It is essential for organizations to assess implementations of new or digital technologies in such a way that employees' job satisfaction is not affected by the process. Introducing a new technology at the workplace leads to multiple outcomes among employees. Besides the change in organizational structures and workflows, which generally occur due to the digital transformation process, employees are usually confronted with the fact that they have to adapt to new roles, learn new routines, deal with increased role conflicts and manage their new perception towards their job. As a result of such ambiguous changes, employees tend to be more stressed, less satisfied at the job and increased turnover intentions (Johnson & Yanson, 2015). As the digitalization of the workplace does not directly cause an increase in turnover

intentions but has an indirect impact through job satisfaction on turnover intentions, organizations should focus on keeping good job satisfaction levels among their employees and thus make technology implementation less stressful.

Furthermore, organizations should develop strategies in order to reduce employees' stress caused by technological transformation by increasing their job satisfaction at the same time. As job satisfaction is rather a complex construct which depends on multiple factors such as workplace participation, intrinsic satisfaction, employee development, the feeling of recognition for good work, organizational justice, pay satisfaction, relationship with coworkers and supervisors, diversity management of the employer (Lee et al., 2020) and so on, it is possible to adjust separately its determinants to achieve an optimal result. In order to reduce turnover intentions, organizations should also focus on creating a desirable work environment that employees need. A supportive work climate that encourages good relationships with coworkers and supervisors through constant feedback does not only contribute to improved performance but also to enhanced satisfaction among employees. These actions further contribute to higher person-organization fit and organizational engagement, which are crucial aspects for ensuring that future employees share the same values and perspectives as the organization. Through a better person-organization fit and increased organizational engagement among employees, their adjustment and acceptance are achieved more efficiently, and thus turnover intentions will be reduced (Winata & Martdianty, 2022).

Furthermore, another essential practical implication includes the importance of employees' attitudes. Future intentions can be predicted through attitudes and certain behaviours observed at the workplace. Observing employees' job attitudes during an organization's digital transformation is crucial, as different behaviours could signal different intentions. Being aware of employees' attitudes is more useful than knowing their intentions because "the decision might be hard to reverse once the intention is there. In contrast, an attitude that signals a propensity to leave without an intention already being formed might offer some opportunities to intervene if the organization wants to prevent the particular person from quitting" (Semmer et al., 2014, p.182). Thus, managers and HR specialists could direct more of their attention on adjusting retention strategies that focus on observing employees' attitudes towards different situations at work in order to be able to prevent employees' dissatisfaction and turnover.

5.3 Limitations and future research suggestions

The results of the present study can be concluded for the given sample. Like multiple studies, the presented research shows some limitations, which will be acknowledged as follows:

First, the sample size is small and confined to a geographical area. Second, the sample shows a conscious bias as the survey was shared among a particular acknowledgeable group. Besides, the survey link was shared via social media, which makes the study accessible for younger individuals and less accessible for older people or individuals who are simply not active on social media channels. Third, the sample consists primarily of females, limiting the findings' applicability to males and other categories. In addition, three-quarters of the sample was represented by individuals from the 24-35 age group.

Furthermore, more than half of the respondents were highly educated individuals holding a master's degree or PhD diploma. Given the specialization level of those respondents, their jobs or possible new jobs are likely to be limited to a specific field, making the job pool for those individuals narrower compared to the ones of high school graduates. Higher-level educated individuals are also more likely to occupy managing positions which are more motivating in terms of benefits, financial remuneration, and professional developing opportunities and hence, to overall job satisfaction. A higher education level and, thus, a specific experience and eagerness to learn may imply a better resistance to technological change and higher adaptability to digital transformation.

In addition, another limitation refers to the questionnaire and the means used to measure digitalization in the work environment. As digitalization is a composite variable in this study and it is measured through three constructs found in the literature to address digitalization by questioning employees, there is a possibility that not all relevant aspects of digitalization were captured. For instance, elements regarding digitalization's impact on teamwork, communication or decision-making processes were not considered. Digitalization tends to rather be a complex compound, and there is a need in literature to agree on how to measure this variable best. Thus, as digitalization keeps evolving and affecting various aspects of the work environment, it is essential to ensure that the questionnaire accurately captures a broad range of factors to accurately represent digitalization's impact on employee outcomes. In the context of further research, it would be interesting to find out how this can be represented best.

The generalizability of the results of this research will remain limited until the study is extended to a broader extent of employees from different countries, especially non-German speaking countries. As the present study is based on cross-sectional data, which did not provide confident

proof of the causality of the model, a possible future research suggestion would be to examine the hypothesized relationships within a longitudinal design where job satisfaction and turnover intention are measured at different points in time (Maden, 2014). For example, the measurement of both should occur both prior to introducing a specific new digital technology at the workplace and post-introduction after allowing employees to get an idea of the new technology to assess the impact of digitalization better and derive causal interferences within the working environment. “Methodologically, asking the employees their exact years of service in the same job would be a better alternative than forming certain categories of tenure and requesting employees to select one of them. Categorical variables might cause the underestimation” (Maden, 2014, p.1130).

VI. Conclusion

Digitalization and the introduction of digital transformation have significantly impacted organizations, their employees and the way of working. Digital technologies have led to excellent outcomes for the work environment and employees: they improved job satisfaction and productivity by automating repetitive tasks. For instance, they increased employee autonomy through multiple tools, which eased planning and organizing tasks without the need for managerial approval. They created a better work environment, empowered employees, improved communication through new channels, which allowed for better engagement in business communication among employees, they achieved higher employee engagement and loyalty and led to increased work efficiency. However, digital transformation has also attracted criticism over time because of its negative effects, such as blurring the work-life balance through increased flexibility which makes it hard to switch off outside of working hours, increase in job insecurity, negative reactions to technology-induced change, additional stress, need for reskilling in order to keep up with new technologies and employees’ negative attitudes towards new technologies fueled by fear of losing a job. All these consequences were extensively addressed by scholars throw-out the past years. Since employees represent the greatest assets for the organizations who employ them, their retention in satisfying conditions is a crucial goal for every employer. Hence, the thesis aimed to shed new light on digitalization’s impact on employee retention by measuring turnover intentions.

The research results show that digitalization does not directly decrease turnover intentions. Digitalization increases employees’ job satisfaction, which in turn decreases turnover intention.

The relationship between digitalization and employees' turnover intentions is described through an indirect only mediation through job satisfaction. In a general sense, an indirect only mediation effect suggests that job satisfaction is a critical factor in accounting for the relationship between digitalization and turnover intentions. This highlights the importance of considering job satisfaction when designing policies or strategies aimed at improving employees' turnover intentions.

The conclusion draws out practical implications from the thesis' results by highlighting the substantial role of job satisfaction as a critical factor in organizational strategies. Organizations should adjust their retention strategies which aim to reduce employees' turnover intentions during digital transformation cycles by focusing on keeping employees satisfied. Thus, organizations can create a work environment that enhances the digitalization transition and promotes employee retention at the same time.

The thesis's conclusion also emphasizes the relevance of future research that further investigates the underlying drivers and moderators influencing the relationship between digitalization, job satisfaction and turnover intention. By pursuing further research on this topic, one can gain a better understanding of how digitalization can be used as an effective means to enhance employee outcomes and organizational performance.

References

- Aghaei, N., Moshiri, K., & Shahrbanian, S. (2012). Relationship between organizational justice and intention to leave in employees of sport and youth head office of Tehran. *European Journal of Experimental Biology*, 2(5), 1564-1570.
- Ahuja, M. K., Chudoba, K. M., Kacmar, C. J., McKnight, D. H., & George, J. F. (2007). IT Road Warriors: Balancing Work-Family Conflict, Job Autonomy, and Work Overload to Mitigate Turnover Intentions. *MIS Quarterly*, 31(1), 1–17. <https://doi.org/10.2307/25148778>
- Ali, N. (2008). Factors affecting overall job satisfaction and turnover intention. *Journal of Managerial Sciences*, 2(2), 239-252.
- Alieva, J. & Powell, D. J. (2023). The significance of employee behaviours and soft management practices to avoid digital waste during a digital transformation. *International Journal of Lean Six Sigma*, 14(1), 1–32. <https://doi.org/10.1108/IJLSS-07-2021-0127>
- Armstrong, C. E. & Shimizu, K. (2007). A Review of Approaches to Empirical Research on the Resource-Based View of the Firm. *Journal of Management*, 33(6), 959–986. <https://doi.org/10.1177/0149206307307645>
- Arshad, H., & Puteh, F. (2015). Determinants of turnover intention among employees. *Journal of Administrative Science*, 12(2), 1-15.
- Balsmeier B., & Woerter, M. (2019). Is this time different? How digitalization influences job creation and destruction. *Research Policy*, 48(8), 103765. <https://doi.org/10.1016/j.respol.2019.03.010>
- Barišić, Rybacka Barišić, J. & Miloloža, I. (2022). “Digital Transformation: Challenges for Human Resources Management”, *ENTRENOVA - ENTERprise REsearch InNOVation*, 7(1), 357–366. <https://doi.org/10.54820/GTFN9743>
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
- Basyal D. K., & Seo, J.-W. (2017). Employees' Resistance to Change and Technology Acceptance in Nepal. *South Asian Studies (Lahore, Pakistan)*, 32(2), 349–362.
- Belete, A.K. (2018). Turnover Intention Influencing Factors of Employees: An Empirical Work Review. *Journal of Entrepreneurship & Organization Management*, 07(03), 1-7. <https://doi.org/10.4172/2169-026x.1000253>
- Berman, & Marshall, A. (2014). The next digital transformation: From an individual-centered to an everyone-to-everyone economy. *Strategy & Leadership*, 42(5), 9–17. <https://doi.org/10.1108/SL-07-2014-0048>

- Bhandari, P. (2022, December 05). Mediator vs. Moderator Variables | Differences & Examples. *Scribbr*. Retrieved February 16, 2023, from <https://www.scribbr.com/methodology/mediator-vs-moderator/>
- Biswakarma, G. (2016). Organizational career growth and employees' turnover intentions: An empirical evidence from Nepalese private commercial banks. *International Academic Journal of Organizational Behavior and Human Resource Management*, 3(2), 10-26.
- Bloomberg, J. (2018). Digitization, digitalization, and digital transformation: confuse them at your peril. *Forbes*. <https://www.forbes.com/sites/jasonbloomberg/2018/04/29/digitization-digitalization-and-digital-transformation-confuse-them-at-your-peril/?sh=517630842f2c>
- Bolli T., & Pusterla, F. (2022). Decomposing the effects of digitalization on workers' job satisfaction. *International Review of Economics*, 69(2), 263–300. <https://doi.org/10.1007/s12232-022-00392-6>
- Brayfield, A. H., & Rothe, H. F. (1951). An index of job satisfaction. *Journal of Applied Psychology*, 35, 307-311.
- Carmeli, A. (2005). The relationship between organizational culture and withdrawal intentions and behavior. *International Journal of Manpower*, 26(2), 177–195. <https://doi.org/10.1108/01437720510597667>
- Carmeli A., & Weisberg, J. (2006). Exploring turnover intentions among three professional groups of employees. *Human Resource Development International*, 9(2), 191–206. <https://doi.org/10.1080/13678860600616305>
- Cazan, A.-M. (2020). The digitization of working life: Challenges and opportunities. *Psychology of Human Resources Journal*, 18(1), 3–6. <https://doi.org/10.24837/PRU.V18I1.457>
- Chopra, R., & Sharma, S. (2020). IMPACT OF DIGITALIZATION ON EMPLOYEES' WORK LIFE BALANCE IN CORPORATE. *International Journal of Creative Research Thoughts*, 8(8), 3386-3393.
- Chu, H. C., & Kuo, T. (2015). Testing Herzberg's two-factor theory in educational settings in Taiwan. *The Journal of Human Resource and Adult Learning*, 11(1), 54-65.
- Cijan, A., Jenič, L., Lamovšek, A., & Stemberger, J. (2019). How digitalization changes the workplace. *Dynamic relationships management journal*, 8(1), 3-12. <https://doi.org/10.17708/DRMJ.2019.v08n01a01>
- Cortellazzo, Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. *Frontiers in Psychology*, 10, 1938–1938. <https://doi.org/10.3389/fpsyg.2019.01938>
- Cropanzano, R. & Mitchell, M. S. (2005). Social Exchange Theory: An Interdisciplinary Review. *Journal of Management*, 31(6), 874–900. <https://doi.org/10.1177/0149206305279602>

- Darlington, R. B., & Hayes, A. F. (2016). *Regression analysis and linear models: Concepts, applications, and implementation*. New York: The Guilford Press.
- Deloitte. (2018, August 2). *Digital enablement turning your transformation into a successful journey*. <https://www2.deloitte.com/content/dam/Deloitte/at/Documents/human-capital/at-digital-enablement-turning-your-transformation-into-a-successful-journey.pdf> (Accessed: 11th of November 2022)
- Deloitte. (2021, August 1). *The Digital Workplace*. Deloitte Belgium. <https://www2.deloitte.com/be/en/pages/technology/enterprisetechology-and-performance/articles/the-digital-workplace.html> (Accessed: 11th of November 2022)
- Di Pietro, L., Pantano, E., & Di Virgilio, F. (2014). Frontline employees' attitudes towards self-service technologies: Threats or opportunity for job performance? *Journal of Retailing and Consumer Services*, 21(5), 844–850. <https://doi.org/10.1016/j.jretconser.2014.02.014>
- Eickemeyer, S.C., Busch, J., Liu, C.-T., & Lippke, S. (2021). Acting instead of reacting—ensuring employee retention during successful introduction of i4.0. *APPLIED SYSTEM INNOVATION*, 4(4), 97. <https://doi.org/10.3390/asi4040097>
- Elias, S. M., Smith, W. L., & Barney, C. E. (2012). Age as a moderator of attitude towards technology in the workplace: work motivation and overall job satisfaction. *Behaviour & Information Technology*, 31(5), 453–467. <https://doi.org/10.1080/0144929X.2010.513419>
- Ellett A. J., Ellis, J. I., Westbrook, T. M., & Dews, D. (2007). A qualitative study of 369 child welfare professionals' perspectives about factors contributing to employee retention and turnover. *Children and Youth Services Review*, 29(2), 264–281. <https://doi.org/10.1016/j.chilyouth.2006.07.005>
- Feng, D., Su, S., Yang, Y., Xia, J., & Su, Y. (2017). Job satisfaction mediates subjective social status and turnover intention among Chinese nurses. *Nursing & health sciences*, 19(3), 388–392.
- Fitzgerald M., Kruschwitz, N., Bonnet, D., & Welch, M. (2014). Embracing Digital Technology: A New Strategic Imperative. *MIT Sloan Management Review*, 55(2), 1.
- Gasparovich, E. O., Uskova, E. V., & Dongauzer, E. V. (2020). The impact of digitalization on employee engagement. In S. I. Ashmarina & V. V. Mantulenko, (Eds.), *Digital Economy and the New Labor Market: Jobs, Competences and Innovative HR Technologies* (pp. 143-150). Springer Nature.
- Gerten E., Beckmann, M., & Bellmann, L. (2019). Controlling Working Crowds: The Impact of Digitalization on Worker Autonomy and Monitoring Across Hierarchical Levels. *Jahrbücher Für Nationalökonomie Und Statistik*, 239(3), 441–481. <https://doi.org/10.1515/jbnst-2017-0154>
- Girma, T. N. (2019). The effects of organizational culture on turnover intention: The mediating role of job satisfaction, a case of Oromia Forest and Wild Life Enterprise. *African Journal of Business Management*, 13(2), 82–89. <https://doi.org/10.5897/AJBM2018.8612>

- Gobble. (2018). Digitalization, Digitization, and Innovation. *Research Technology Management*, 61(4), 56–59. <https://doi.org/10.1080/08956308.2018.1471280>
- Gong, & Ribiere, V. (2021). Developing a unified definition of digital transformation. *Technovation*, 102, 102217. <https://doi.org/10.1016/j.technovation.2020.102217>
- Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A Meta-Analysis of Antecedents and Correlates of Employee Turnover: Update, Moderator Tests, and Research Implications for the Next Millennium. *Journal of Management*, 26(3), 463–488. <https://doi.org/10.1177/014920630002600305>
- Gunadi, L., Siahaan, A., & Adji, A. (2021). Turnover Intention Analysis in Digitalization Era Within Covid-19 Pandemic Situation. *Emerging Markets: Business and Management Studies Journal*, 9(1), 19-33.
- Gurtoo, A., & Tripathy, A. (2000). Assessing workers' attitude towards technological change: Scale Construction. *Indian Journal of Industrial Relations*, 35(4), 519-531.
- Gürbüz, S. (2017). Survey as a quantitative research method. *Research Methods and Techniques in Public Relations and Advertising*, 2017, 141-162.
- Habib, S., Aslam, S., Hussain, A., Yasmeen, S., & Ibrahim, M. (2014). The impact of organizational culture on job satisfaction, employees commitment and turn over intention. *Advances in Economics and Business*, 2(6), 215-222.
- Haddad, C. J. (1996). Employee attitudes toward new technology in a unionized manufacturing plant. *Journal of Engineering and Technology Management*, 13(2), 145–162. [https://doi.org/10.1016/S0923-4748\(96\)01001-6](https://doi.org/10.1016/S0923-4748(96)01001-6)
- Haddud, A., & McAllen, D. (2018). Digital Workplace Management: Exploring Aspects Related to Culture, Innovation, and Leadership. *2018 Portland International Conference on Management of Engineering and Technology (PICMET)*. <https://doi.org/10.23919/picmet.2018.8481807>
- Han, G. & Jekel, M. (2011). The mediating role of job satisfaction between leader-member exchange and turnover intentions. *Journal of Nursing Management*, 19(1), 41–49. <https://doi.org/10.1111/j.1365-2834.2010.01184.x>
- Harkins, P.J. (1998). Why employees stay – or go. *Workforce (Costa Mesa, Calif.)*, 77(10), 74.
- Hassan, R. (2014). Factors influencing turnover intention among technical employees in Information technology organization: A Case of XYZ (M) SDN. BHD. *International Journal of Arts and Commerce*, 3(9), 120-137.
- Hausberg J. P., Liere-Netheler, K., Packmohr, S., Pakura, S., & Vogelsang, K. (2019). Research streams on digital transformation from a holistic business perspective: a systematic literature review and citation network analysis. *Zeitschrift Für Betriebswirtschaft*, 89(8-9), 931–963. <https://doi.org/10.1007/s11573-019-00956-z>
- Hayes. A. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76(4), 408–420. <https://doi.org/10.1080/03637750903310360>

- Hayes. A. (2017). *Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. The Guilford Press.
- Hemerling, J., Kilmann, J., Danoesastro, M., Liza Stutts, L., & Ahern, C. (2018, April 13). It's not a digital transformation without a digital culture. *BCG*. <https://www.bcg.com/publications/2018/not-digital-transformation-without-digital-culture.aspx> (Accessed: 13th of November, 2022)
- Herzberg, F. (1971). *Work and the nature of man* (4. print..). World Publ.
- Hettich., A. S. (2017). Friend or Foe? An Exploratory Analysis of Employees' Attitudes Towards Self-Service Technologies. In *Beiträge zur Dienstleistungsforschung 2016* (pp. 187–212). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-16464-5_9
- Hicks, M. (2019). Why the Urgency of Digital Transformation Is Hurting the Digital Workplace. *Strategic HR Review* 18(1), 34–35. <https://doi.org/10.1108/SHR-02-2019-153>
- Holtom, B. C., Mitchell, T. R., Lee, T.W. & Eberly, M.B. (2008). Turnover and Retention Research: A Glance at the Past, a Closer Review of the Present, and a Venture into the Future. *Academy of Management Annals* 2(1), 231-274. <https://doi.org/10.5465/19416520802211552>
- Hom, P. W., Allen, D. G., & Griffeth, R. W. (2020). *Employee Retention and Turnover* (1st ed.). Routledge. <https://doi.org/10.4324/9781315145587>
- Ismail, M. H., Khater, M., & Zaki, M. (2017). Digital business transformation and strategy: What do we know so far? *University of Cambridge*. https://cambridgeservicealliance.eng.cam.ac.uk/system/files/documents/2017NovPaper_Mariam.pdf (Accessed: 15th of November, 2022)
- Jeswani, S., & Dave, S. (2012). Emotional intelligence as an antecedent of turnover intention: An empirical analysis on faculty members. *International Journal of Management*, 3(10), 387-400.
- Johnson, R. D., & Yanson, R. (2015). Job Satisfaction and Turnover Intentions during Technology Transition: The Role of User Involvement, Core Self-Evaluations, and Computer Self-Efficacy. *Information Resources Management Journal*, 28(4), 38–51. <https://doi.org/10.4018/IRMJ.2015100103>
- Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional Effects on Job and Life Satisfaction. *Journal of Applied Psychology*, 83(1), 17–34. <https://doi.org/10.1037/0021-9010.83.1.17>
- Kim, S., Tam, L., Kim, J.-N., & Rhee, Y. (2017). Determinants of employee turnover intention. *Corporate Communications*, 22(3), 308–328. <https://doi.org/10.1108/CCIJ-11-2016-0074>
- Lee, H.-W-, Robertson, P. J., & Kim, K. (2020). Determinants of Job Satisfaction Among U.S. Federal Employees: An Investigation of Racial and Gender Differences. *Public Personnel Management*, 49(3), 336–366. <https://doi.org/10.1177/0091026019869371>

- Legner, Eymann, T., Hess, T., Matt, C., Böhmman, T., Drews, P., Mädche, A., Urbach, N., & Ahlemann, F. (2017). Digitalization: Opportunity and Challenge for the Business and Information Systems Engineering Community. *Business & Information Systems Engineering*, 59(4), 301–308. <https://doi.org/10.1007/s12599-017-0484-2>
- Li, J., Bonn, M. A., & Ye, B. H. (2019). Hotel employee's artificial intelligence and robotics awareness and its impact on turnover intention: The moderating roles of perceived organizational support and competitive psychological climate. *Tourism Management* (1982), 73, 172–181. <https://doi.org/10.1016/j.tourman.2019.02.006>
- Lin, C. & Chen, M. (2004). Career Commitment as a Moderator of the Relationships among Procedural Justice, Perceived Organizational Support, Organizational Commitment, and Turnover Intentions. *Asia Pacific Management Review*, 9(3), 519–538. <https://doi.org/10.6126/APMR.2004.9.3.07>
- Loi, R., Hang-Yue, N., & Foley, S. (2006). Linking employees' justice perceptions to organizational commitment and intention to leave: The mediating role of perceived organizational support. *Journal of Occupational and Organizational Psychology*, 79(1), 101–120. <https://doi.org/10.1348/096317905X39657>
- Maden. C. (2014). Impact of fit, involvement, and tenure on job satisfaction and turnover intention. *The Service Industries Journal*, 34(14), 1113–1133. <https://doi.org/10.1080/02642069.2014.939644>
- March, J. G. & Simon, H. A., (1958). Organizations. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*. <https://ssrn.com/abstract=1496194>
- McKinsey & Company. (2020, February 28). The future of work in Turkey. *McKinsey & Company*. <https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-in-turkey> (Accessed: 12th of November, 2022).
- Meske C., & Junglas, I. (2021). Investigating the elicitation of employees' support towards digital workplace transformation. *Behaviour & Information Technology*, 40(11), 1120–1136. <https://doi.org/10.1080/0144929X.2020.1742382>
- Neves, P. (2009). Readiness for Change: Contributions for Employee's Level of Individual Change and Turnover Intentions. *Journal of Change Management*, 9(2), 215–231. <https://doi.org/10.1080/14697010902879178>
- Ng'ethe, J. M., Namusonge, G. S., & Iravo, M. A. (2012). Influence of leadership style on academic staff retention in public universities in Kenya. *International journal of business and social science*, 3(21), 297–302.
- Ngo-Henha, P. (2017). A Review of Existing Turnover Intention Theories. World Academy of Science, Engineering and Technology, Open Science Index 131, *International Journal of Economics and Management Engineering*, 11(11), 2751–2758. <https://doi.org/10.5281/zenodo.1316263>
- Özbağ, G. K., & Ceyhun, G. Ç. (2014). Does job satisfaction mediate the relationship between Work-family conflict and turnover? A study of Turkish marine pilots. *Procedia-Social and Behavioral Sciences*, 140, 643–649.

- Parida, Sjödin, D., & Reim, W. (2019). Reviewing literature on digitalization, business model innovation, and sustainable industry: Past achievements and future promises. *Sustainability (Basel, Switzerland)*, 11(2), 391. <https://doi.org/10.3390/su11020391>
- Park, J. S. & Kim, T. H. (2009). Do types of organizational culture matter in nurse job satisfaction and turnover intention? *International Journal of Health Care Quality Assurance Incorporating Leadership in Health Services*, 22(1), 20–38. <https://doi.org/10.1108/17511870910928001>
- Parviainen P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2022). Tackling the digitalization challenge: how to benefit from digitalization in practice. *International Journal of Information Systems and Project Management*, 5(1), 63–77. <https://doi.org/10.12821/ijispm050104>
- Price J. L., & Mobley, W. H. (1983). Employee Turnover: Causes, Consequences, and Control [Review of *Employee Turnover: Causes, Consequences, and Control*]. *ILR Review*, 36(3), 506–507. New York State School of Industrial and Labor Relations, Cornell University. <https://doi.org/10.2307/2523037>
- Puni, A., Agyemang, C. B., & Asamoah, E. S. (2016). Leadership styles, employee turnover intentions and counterproductive work behaviours. *International Journal of innovative research and development*, 5(1), 1-7.
- Rahman, W. and Nas, Z. (2013). Employee development and turnover intention: theory validation. *European journal of training and development*, 37(6), 564–579. <https://doi.org/10.1108/EJTD-May-2012-0015>.
- Ratna, R., & Kaur, T. (2016). The impact of Information Technology on Job Related Factors like Health and Safety, Job Satisfaction, Performance, Productivity and Work Life Balance. *Journal of Business and Financial Affairs*, 5, 1-9. <https://doi.org/10.4172/2167-0234.1000171>
- Reichers, A. E., Wanous, J. P., & Austin, J. T. (1997). Understanding and managing cynicism about organizational change. *Academy of Management Perspectives*, 11(1), 48. <https://doi.org/10.5465/ame.1997.9707100659>
- Robinson, S. L. (1996). Trust and Breach of the Psychological Contract. *Administrative Science Quarterly*, 41(4), 574–599. <https://doi.org/10.2307/2393868>
- Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation Analysis in Social Psychology: Current Practices and New Recommendations. *Social and Personality Psychology Compass*, 5(6), 359–371. <https://doi.org/10.1111/j.1751-9004.2011.00355.x>
- Sabbagh, K., Friedrich, R., El Darwiche B., Singh, M., Ganediwalla S., Katz, R. (2012) Maximizing the impact of digitization. *The global information technology report, 2012*, 121-133.
- Schraeder, M., Swamidass, P. M., & Morrison, R. (2006). Employee Involvement, Attitudes and Reactions to Technology Changes. *Journal of Leadership & Organizational Studies*, 12(3), 85–100. <https://doi.org/10.1177/107179190601200306>

- Schwertner, K. (2017). Digital transformation of business. *Trakia Journal of Sciences*, 15(1), 388-393. <https://doi.org/10.15547/tjs.2017.s.01.065>
- Semmer, N., Elfering, A., Baillod, J., Berset, M., & Beehr, T. A. (2014). Push and Pull Motivations for Quitting A Three-Wave Investigation of Predictors and Consequences of Turnover. *Zeitschrift Für Arbeits- Und Organisationspsychologie*, 58(4), 173–185. <https://doi.org/10.1026/0932-4089/a000167>
- Siew, L. K. (2017). Analysis of the relationship between leadership styles and turnover intention within small medium enterprise in Malaysia. *Journal of Arts & Social Sciences*, 1(1), 1-11.
- Singh, S., & Sant, S. (2021). Dynamics of employee turnover intention. *Bi-lingual International Research Journal*, 11(41), 109-113.
- Sokhanvar, M., Hasanpoor, E., Hajhashemi, S., & Kakemam, E. (2016). The Relationship between Organizational Justice and Turnover Intention: A Survey on Hospital Nurses. *Patient Safety & Quality Improvement Journal*, 4(2), 358–362. <https://doi.org/10.22038/psj.2016.6690>
- Sun, J., & Teng, J. T. (2012). Information Systems Use: Construct Conceptualization and Scale Development. *Computers in Human Behavior*, 28 (5), 1564–1574. <https://doi.org/10.1016/j.chb.2012.03.016>
- Sun, J. (2017). The effect of information technology on IT-facilitated coordination, IT-facilitated autonomy, and decision-makings at the individual level. *Applied Economics*, 49(2), 138–155. <https://doi.org/10.1080/00036846.2016.1192276>
- Taşdoğan, A. M. (2020). Knowledge, attitudes and perspectives of anesthesiologists on artificial intelligence. *Eurasian Journal of Medicine and Investigation*, 4(1), 1-6.
- Tănase, V. & Paraschiv, R. (2018). Digitizare, Digitalizare și Transformare digitală. [Digitization, Digitalization and Digital Transformation] in *Cercetări filosofico-psihologice*, X (2), 85-92. Bucharest, Romania.
- Teng, T.-Y., Wu, J.-H., & Lee, C.-Y. (2022). Acceptance and experience of digital dental technology, burnout, job satisfaction, and turnover intention for Taiwanese dental technicians. *BMC Oral Health*, 22(1), 1–342. <https://doi.org/10.1186/s12903-022-02359-z>
- Thatcher, J. B., Stepina, L. P., & Boyle, R. J. (2002). Turnover of Information Technology Workers: Examining Empirically the Influence of Attitudes, Job Characteristics, and External Markets. *Journal of Management Information Systems*, 19(3), 231–261. <https://doi.org/10.1080/07421222.2002.11045736>
- Towers, I., Duxbury, L., Higgins, C. & Thomas J. (2006). Time thieves and space invaders: technology, work and the organization. *Journal of Organizational Change Management*, 19(5), 593-618. <https://doi.org/10.1108/09534810610686076>

- Trenerry, B., Chng, S., Wang, Y., Suhaila, Z. S., Lim, S. S., Lu, H. Y., & Oh, P. H. (2021). Preparing Workplaces for Digital Transformation: An Integrative Review and Framework of Multi-Level Factors. *Frontiers in Psychology*, 12, 620766. <https://doi.org/10.3389/fpsyg.2021.620766>
- Trittin-Ulbrich, H., Scherer, A. G., Munro, I., & Whelan, G. (2020). Exploring the dark and unexpected sides of digitalization: Toward a critical agenda. *Organization*, 28(1), 8–25. <https://doi.org/10.1177/1350508420968184>
- Urbach, N., & Röglinger, M. (2018). Introduction to Digitalization Cases: How Organizations Rethink Their Business for the Digital Age. *Management for Professionals*, 1–12. https://doi.org/10.1007/978-3-319-95273-4_1
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Verina, N., & Titko, J. (2019). Digital transformation: conceptual framework. *Proceedings of 6th International Scientific Conference Contemporary Issues in Business, Management and Economics Engineering '2019*. <https://doi.org/10.3846/cibmee.2019.073>
- Winata, A., & Martdianty, F. (2022, March). Effects of Supportive Work Environment, Person-Organization Fit and Organizational Engagement on Digital Industry's Employees Turnover Intention. In *Proceedings of the 4th International Conference on Economics, Business and Economic Education Science, ICE-BEES 2021*, 27-28 July 2021, Semarang, Indonesia. <https://eudl.eu/pdf/10.4108/eai.27-7-2021.2316816>
- Zeshan, M., Qureshi, T. M., & Saleem, I. (2021). Impact of digitalization on employee's autonomy: evidence from French firms. *VINE Journal of Information and Knowledge Management Systems*. <https://doi.org/10.1108/vjikms-06-2021-0090>
- Zhang, M., Fried, D. D., & Griffeth, R. W. (2012). A review of job embeddedness: Conceptual, measurement issues, and directions for future research. *Human Resource Management Review*, 22(3), 220–231. <https://doi.org/10.1016/j.hrmr.2012.02.004>
- Zhao, X., Lynch, J., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. *The Journal of Consumer Research*, 37(2), 197–206. <https://doi.org/10.1086/651257>

Appendix A: Survey questions

Dear participant,

My name is Emanuela-Maria Ispas and I am a Master's degree student at the University of Vienna. As part of my Master Thesis "Retaining talent in the digital work environment" I developed this online survey, which aims to give new insights on employees' attitudes towards digitalization and its impact on turnover intentions. This survey is addressed to currently employed individuals in Austria or Germany.

Please keep in mind that your answers will be kept anonymous and the completion of the survey will take 5 minutes.

Thank you very much for your participation & time!

Next >

*What is your age?

- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55 or more

*What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to say

*In which country are you currently employed?

- ☐ Austria
- ☐ Germany

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

- ☐ High school degree or equivalent
- ☐ Bachelor's degree or equivalent
- ☐ Master's degree or equivalent
- ☐ PhD or equivalent

*In which industry are you currently employed?

- ☐ Construction & Real Estate
- ☐ Financial & Insurance activities
- ☐ Industry
- ☐ Information Technology & Communication
- ☐ Public Administration, Defence, Education, Human Health and Social Work
- ☐ Wholesale & Retail Trade, Transportation, Accommodation & Food
- ☐ Other

*What is your tenure in the industry in which you are currently employed?

- ☐ 12 months or less
- ☐ 1-3 years
- ☐ 4-6 years
- ☐ 7-10 years
- ☐ more than 10 years

*What is your tenure in the current position?

- ☐ 12 months or less
- ☐ 1-3 years
- ☐ 4-6 years
- ☐ 7-10 years
- ☐ more than 10 years

Next >

*Attitude towards digital transformation and new technology.

Please rate the following statements accordingly:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
To digitally transform the workplace is a good idea.	☐	☐	☐	☐	☐
I would like to work in a digitally transformed work environment.	☐	☐	☐	☐	☐
A digitally transformed workplace would make my work more interesting.	☐	☐	☐	☐	☐

*Newer kinds of technologies, such as computers, robots etc., are being introduced more and more in your country:

Please rate the following statements accordingly:

	greatly reduce the number of jobs	reduce the number of jobs	neither reduce nor increase the number of jobs	increase the number of jobs	greatly increase the number of jobs
Over the next few years, I think these new technologies will...	☐	☐	☐	☐	☐

*

	much less interesting	less interesting	neither	more interesting	much more interesting
I think that the introduction of new technologies over the next few years will make work...	☐	☐	☐	☐	☐

*Use of Information Technology on the Job.

Please rate the following statements accordingly:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I rely on corporate Information Systems (IS) extensively for solving problems in my job.	☐	☐	☐	☐	☐
I depend on corporate IS extensively to carry out my job responsibilities.	☐	☐	☐	☐	☐
Corporate IS is really indispensable for my work.	☐	☐	☐	☐	☐
Without corporate IS, it would be very difficult for me to do my job.	☐	☐	☐	☐	☐

Next >

* Job satisfaction.

Please rate the following statements accordingly:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I feel fairly well satisfied with my present job.	☐	☐	☐	☐	☐
Most days I am enthusiastic about my work.	☐	☐	☐	☐	☐
I find real enjoyment in my work.	☐	☐	☐	☐	☐

* Job satisfaction.

Please rate the following statements accordingly:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Each day of work seems like it will never end.	☐	☐	☐	☐	☐
I consider my job rather unpleasant.	☐	☐	☐	☐	☐

Next >

* Turnover Intention.

Please rate the following statements accordingly:

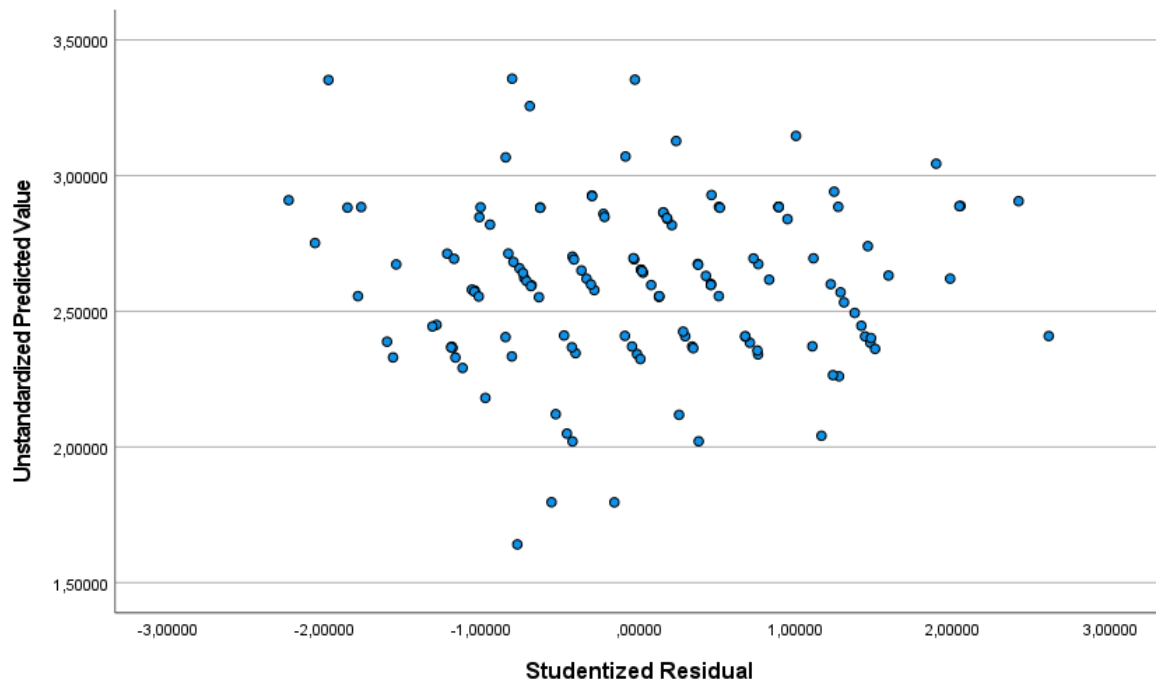
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
If I have an opportunity, I will change jobs.	☐	☐	☐	☐	☐
I am actively looking for a new job.	☐	☐	☐	☐	☐
If I could choose, I would rather work in a different organization.	☐	☐	☐	☐	☐

Next >

We thank you for your time spent taking this survey.
Your response has been recorded.

Appendix B: Regression analysis

Regression Conditions examinations



Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N*	Percent	N	Percent	N	Percent
Studentized Residual	137	99,3%	1	0,7%	138	100,0%

**to exclude outliers, one observation was removed (only in the regression analysis of chapter 4.2.2)*

Descriptives

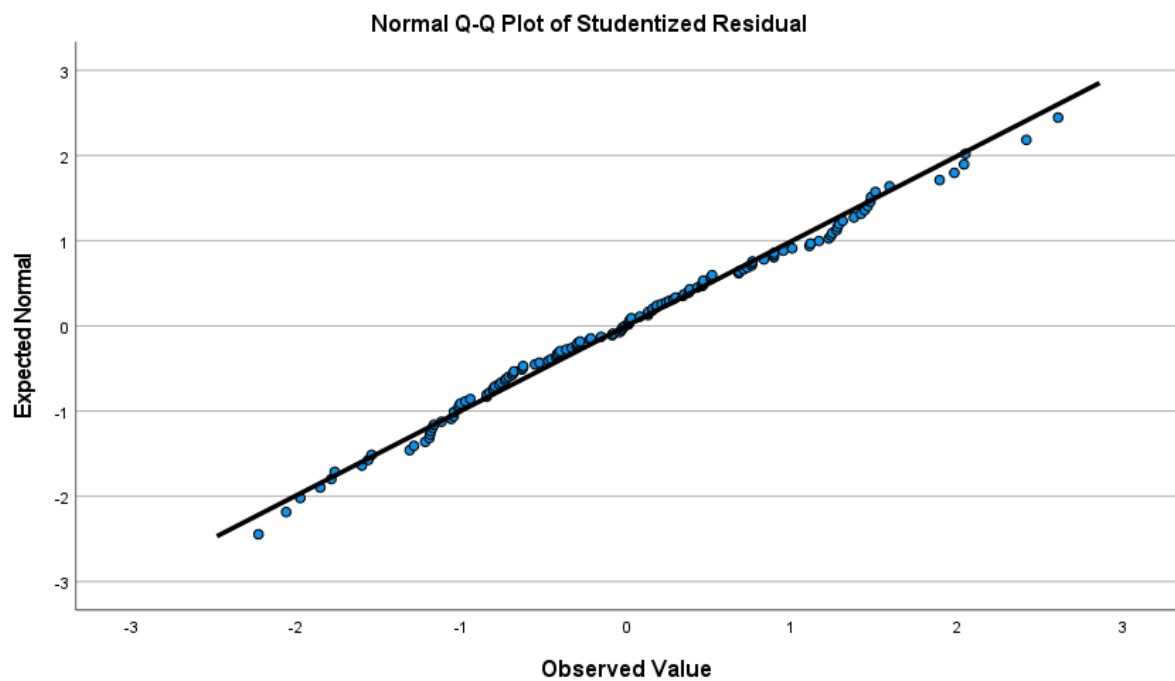
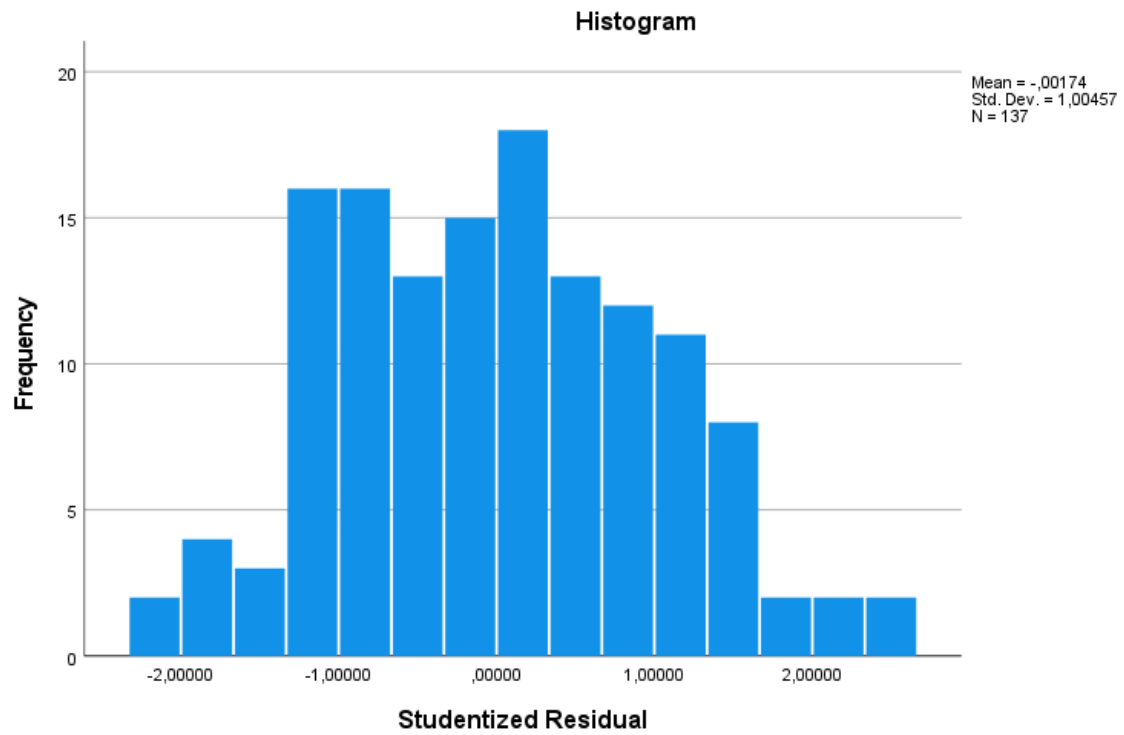
			Statistic	Std. Error
Studentized Residual	Mean		-,0017434	,08582627
	95% Confidence Interval for Mean	Lower Bound	-,1714700	
		Upper Bound	,1679833	
	5% Trimmed Mean		-,0125970	
	Median		-,0105738	
	Variance		1,009	
	Std. Deviation		1,00457070	
	Minimum		-2,22871	
	Maximum		2,61085	
	Range		4,83956	
	Interquartile Range		1,48547	
	Skewness		,194	,207
	Kurtosis		-,395	,411

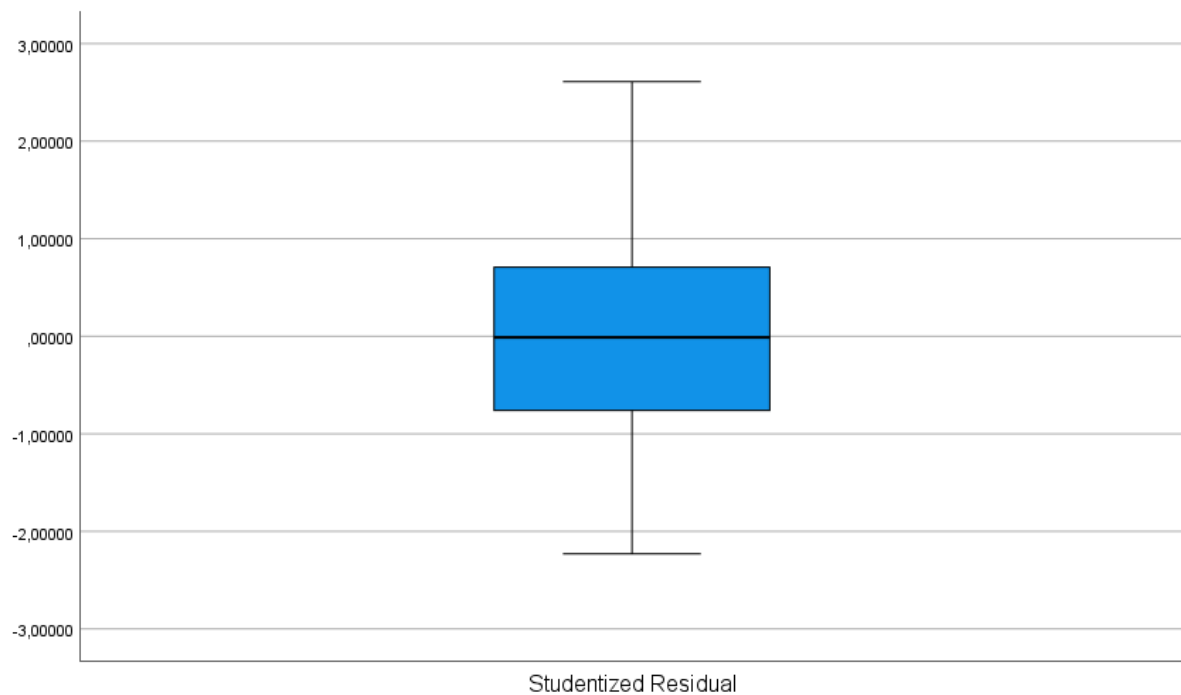
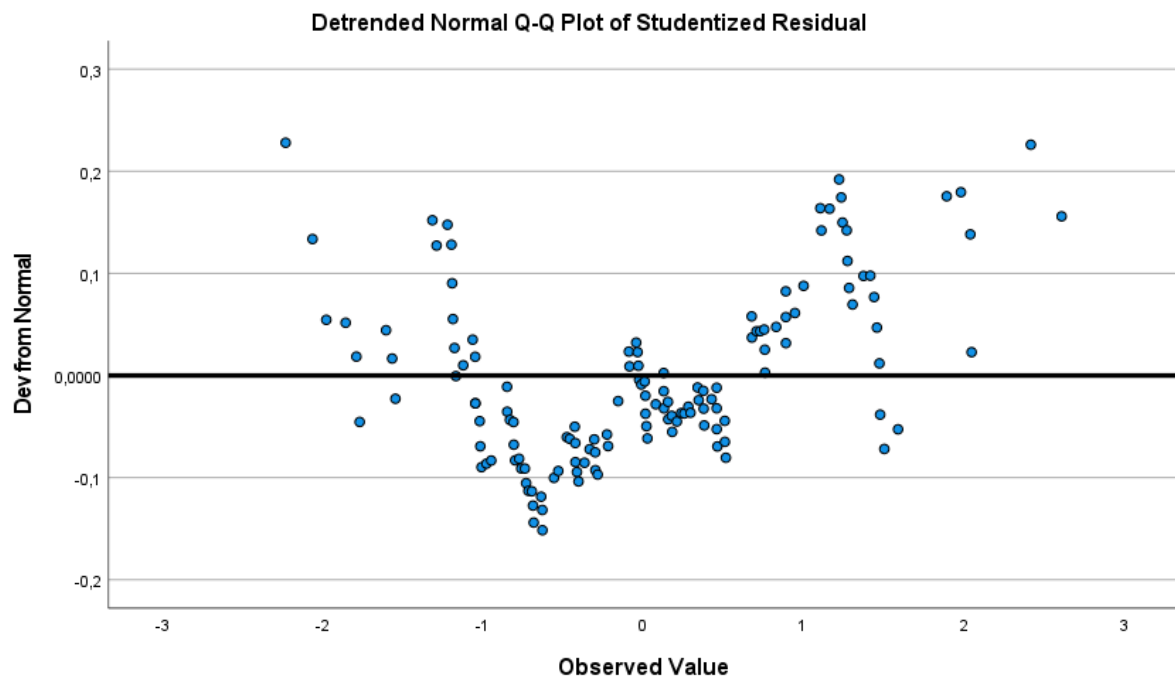
Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Studentized Residual	,054	137	,200*	,991	137	,481

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction





Regression output tables

Model Summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,323 ^a	,105	,070	,88233	
2	,323 ^b	,105	,063	,88572	1,914

a. Predictors: (Constant), Age, Gender, Country of employment, Education, Job Tenure

b. Predictors: (Constant), Age, Gender, Country of employment, Education, Job Tenure, Digitalization

c. Dependent Variable: Turnover Intention

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11,911	5	2,382	3,060	,012 ^b
	Residual	101,985	131	,779		
	Total	113,896	136			
2	Regression	11,912	6	1,985	2,531	,024 ^c
	Residual	101,984	130	,784		
	Total	113,896	136			

a. Dependent Variable: Turnover Intention

b. Predictors: (Constant), Age, Gender, Country of employment, Education, Job Tenure

c. Predictors: (Constant), Age, Gender, Country of employment, Education, Job Tenure, Digitalization

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3,805	,369		10,304	<,001		
	Age	-,228	,134	-,176	-1,703	,091	,640	1,562
	Gender	-,190	,155	-,103	-1,228	,222	,979	1,021
	Country of employment	,022	,165	,011	,132	,895	,974	1,027
	Education	-,287	,105	-,232	-2,725	,007	,946	1,057
	Job Tenure	,043	,087	,051	,497	,620	,651	1,537
2	(Constant)	3,792	,556		6,817	<,001		
	Age	-,228	,135	-,176	-1,693	,093	,636	1,573
	Gender	-,190	,156	-,103	-1,222	,224	,979	1,022
	Country of employment	,022	,165	,011	,131	,896	,973	1,028
	Eductaion	-,287	,106	-,232	-2,714	,008	,945	1,058
	Job Tenure	,043	,087	,051	,494	,622	,650	1,538
	Digitalization	,004	,122	,003	,032	,975	,984	1,017

a. Dependent Variable: Turnover Intention

Appendix C: Mediation analysis

Mediation Matrix (SPSS Output)

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.0 *****

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

Model : 4
Y : TOI
X : Digitali
M : JS

Covariates:
Educatio

Sample
Size: 138

OUTCOME VARIABLE:
JS

Model Summary	R	R-sq	MSE	F (HC3)	df1	df2	p
	,3347	,1120	,5308	10,0432	2,0000	135,0000	,0001

Model	coeff	se (HC3)	t	p	LLCI	ULCI
constant	2,1533	,4385	4,9110	,0000	1,2862	3,0205
Digitali	,2480	,1130	2,1947	,0299	,0245	,4716
Educatio	,2707	,0788	3,4333	,0008	,1147	,4266

Standardized coefficients
coeff
Digitali ,2023
Educatio ,2635

OUTCOME VARIABLE:
TOI

Model Summary	R	R-sq	MSE	F (HC3)	df1	df2	p
	,6794	,4615	,4679	36,3413	3,0000	134,0000	,0000

Model	coeff	se (HC3)	t	p	LLCI	ULCI
constant	5,1860	,4422	11,7266	,0000	4,3113	6,0607
Digitali	,1682	,0918	1,8313	,0693	-,0135	,3499
JS	-,8117	,0849	-9,5646	,0000	-,9796	-,6439
Educatio	-,0706	,0896	-,7882	,4320	-,2479	,1066

Standardized coefficients
coeff
Digitali ,1142
JS -,6757
Educatio -,0573

```

***** TOTAL EFFECT MODEL *****
OUTCOME VARIABLE:
TOI

Model Summary
      R      R-sq      MSE      F(HC3)      df1      df2      p
    ,2367    ,0560    ,8142    3,3903    2,0000   135,0000   ,0366

Model
      coeff      se(HC3)      t      p      LLCI      ULCI
constant    3,4381    ,5654    6,0812    ,0000    2,3200    4,5562
Digitali    -,0331    ,1399   -,2369    ,8131   -,3098    ,2435
Educatio    -,2903    ,1146   -2,5335    ,0124   -,5170   -,0637

Standardized coefficients
      coeff
Digitali    -,0225
Educatio    -,2353

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

Total effect of X on Y
      Effect      se(HC3)      t      p      LLCI      ULCI      c_cs
    -,0331    ,1399   -,2369    ,8131   -,3098    ,2435   -,0225

Direct effect of X on Y
      Effect      se(HC3)      t      p      LLCI      ULCI      c'_cs
    ,1682    ,0918    1,8313    ,0693   -,0135    ,3499    ,1142

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
JS    -,2013    ,0900   -,3901   -,0404

Completely standardized indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
JS    -,1367    ,0589   -,2561   -,0273

***** 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

NOTE: A heteroscedasticity consistent standard error and covariance matrix
estimator was used.

WARNING: Variables names longer than eight characters can produce incorrect output
when some variables in the data file have the same first eight characters. Shorter
variable names are recommended. By using this output, you are accepting all risk
and consequences of interpreting or reporting results that may be incorrect.

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

```