NOVA SCHOOL OF
BUSINESS & ECONOMICS

Work Project

Master International Management

The Effect of Chronological Age on Employees' Acceptance of Digital Business Transformation: A Moderated Mediation Study of Work Motives and Perceived Organizational Support.

Kathleen Isabell Schulz
Student ID: 31794

Nova School of Business and Economics
Maastricht, 4th of January 2019
31794@novasbe.pt

Supervisor: João Castro
Dr. Julia M. Kensbock

Table of Content *Page*

Abstract

Since companies across the world are currently experiencing two pervasive and influential transformations, indeed the increasingly age diverse workforces and implementations of digital technologies, researchers and organizations need to generate more insights about how these changes interact and can be successfully managed. Several assumptions exist about older employees being resistant towards digital business transformation (DBT), however, there is no extensive empirical research for this phenomenon yet, neither are there any explanations. Hence, the purpose of this thesis is to analyze the effect of employees' chronological age on their acceptance behavior towards DBT. In order to explain the association, common work motives are investigated as mediators. Moreover, it is predicted that the motives-acceptance relationships can be moderated by perceived organizational support (POS). To test the assumptions and find explanations, a moderated mediation model is analyzed, based on survey data from 132 individuals working in different industries. The output suggests that age is indeed negatively related to acceptance of DBT and this is fully mediated by growth and social motives. Contrary to the predictions, job security motives are not mediating the relationship. Highly value-adding is the moderating effect of POS, which shows that POS compensates for low levels of growth and social motives to predict DBT-acceptance. Thus, the thesis suggests that managers have to implement high levels of POS, especially when the organization contains several employees who are not or only slightly driven by growth and social motives, in order to ensure the successful implementation of DBT.

Keywords: chronological age; digital business transformation; acceptance of change; work motives; perceived organizational support.

Introduction

"There is a major paradigm shift happening […]. It is being called the digital transformation."

- Debra *Schug, BNP Media*

According to Schug (2018), this paradigm shift is affecting almost every company nowadays, as it is seen as a crucial growth and performance catalyst in a wide range of industries, including health, transport, governance, environment, education and agriculture, amongst others (OECD, 2017). In general, digital business transformation (DBT) involves the implementation and use of digital technologies to enable significant business improvements (Fitzgerald et al., 2013). Such digital technologies are mobile devices, social media, Big Data analytics, robots and other embedded devices, which can raise the productivity, performance and competitiveness of a company (OECD, 2017; Fitzgerald et al., 2013) as well as lead to new efficiencies, enhanced customer experiences and new business models (Prising, Sorenson, & Weinelt, 2018). Specifically, from 2006 to 2016, industry leaders have been able to double their productivity with these digital technologies and since then, more and more firms have started to invest in DBT (Prising, Sorenson, & Weinelt, 2018). However, in order to experience these benefits, it has to be successfully implemented. Several companies reported failures in achieving their DBT goals due to various reasons, for instance a too fast or slow pace of implementation, a lack of (leadership) vision or limiting internal politics (Fitzgerald et al., 2013). Another reason is the resistance of employees to accept DBT and the corresponding changes (Ewenstein, Smith, & Sologar, 2015). In fact, DBT is about more than just installing digital technologies and automating business processes (Fitzgerald, et al., 2013). It involves the changes of people's behaviors, their jobs, tasks and compensations as well as changes in organizational structures (Rayome, 2017). Employees' acceptance to work with digital technologies is crucial, especially because a study conducted by McKinsey states that 70% of change programs fail due to this resistance (Ewenstein, Smith, & Sologar, 2015). But why do some employees not accept DBT? One aspect that could help answering this question is today's workforce, which is increasingly

age diverse. Indeed, companies do not only experience DBTs nowadays, but also dramatic changes in the age structure of societies (Tempest et al., 2002). Thus, the current workforce includes a large amount of older employees due to low fertility rates, rising life expectancies and the large baby boom generation (Boehm, Kunze, & Bruch, 2014). Until now, limited research has been conducted about the effect of age on the acceptance of DBT. Hence, the purpose of the thesis is to fill this research gap about the relationship between chronological age and employees' acceptance of DBT. More specifically, it aims to explain *why* some employees do not accept DBT based on mediation effects of work motives.

So far, it is known that DBT is becoming increasingly important for every organization nowadays (OECD, 2017) and that the workforce is getting more age diverse with younger and older employees pursuing different motives (Boehm, Kunze, & Bruch, 2014; Kooij et al. 2013). Moreover, it is stated that all employees play a crucial role in the success of DBT, as their non-acceptance can lead to an implementation failure. However, there is a lack of literature, because it is not determined yet, *which* employees are resistant and *why*. For instance, a survey by the *Sloan Center on Aging and Work* concluded that late-career employees are the most resistant to digital change (Minnich, 2011), next to Fitzgerald et al. (2013), who are of the opinion that older people are technophobic. Nevertheless, this has not been subject to research by scholars, thus the study investigates if older employees are indeed the ones not accepting DBT.

Another research gap, that is addressed here, is the mediating role of several work motives between the relationship of age and DBT-acceptance. Kooij et al. (2011; 2013) and Kooij and van de Voorde (2011) identified that older employees are motivated by different aspects than younger people. Their findings regarding growth, job security and social motives are forming the basis of this study for explaining *why* some employees do and some do not accept DBT. Additionally, the Selection, Optimization and Compensation theory (Baltes & Baltes, 1990) as well as the Socio-Emotional Selectivity theory (Carstensen, 1995) are utilized to derive thorough hypotheses. Using these theories and investigating the mediating effects of

work motives can create new and value-adding knowledge, which is crucial for filling the stated research gap.

Moreover, if the aforementioned work motives can provide an explanation for the acceptance behavior of employees of different chronological ages, the theory of perceived organizational support (POS) is used to identify helpful managerial implications to reduce DBT-resistance. Indeed, employees tend to form general beliefs about how the organization values them as well as their work (Eisenberger et al., 1986). If POS is high, it can lead to higher commitment in terms of felt obligations, improved performance and engagement (Eisenberger et al., 2001). This study analyzes if POS could be used to increase workers' willingness to accept DBT. More specifically, a compensation effect is expected based on previous research that identified similar effects (Kerr & Jermier, 1987; Ho et al. 2018).

Overall, the aim of this thesis is to find explanations for employees' non-acceptance of DBT, based on the increasingly age diverse workforce with different work motives, and further to investigate if POS is an opportunity for managers to provide an environment in which all employees are willing to accept the corresponding changes. To address this research gap, a moderated mediation model was developed (Figure 1, p. 17), which will be thoroughly analyzed in this study. Firstly, the focus lies on the direct effect of chronological age and accepting DBT. Subsequently, it is investigated if the relationship can be explained by the mediation of growth, job security and social motives. Thirdly, the compensatory effect of POS as a moderator on the motives-acceptance associations was tested and finally, the overall moderated mediation model is studied.

Literature Review and Hypotheses Development

I. Age and Acceptance

Before analyzing the reason (work motives) why some employees do not accept DBT, it first has to be tested if researchers and authors are correct about their assumptions that older

employees are resistant to accept DBT, meaning that there is a negative relationship between age and acceptance of DBT.

Above, several of the benefits of DBT are already mentioned, namely improved performance, productivity, competitiveness, efficiencies, business models and perceived customer values (Prising, Sorenson, & Weinelt, 2018). This list can be enhanced with various other advantages, for instance, cost savings, more mobile and agile workforces, increased flexibility and better adaptability to the increasingly complex marketplace (Buchanan, Kelley, & Hatch, 2016). All of these benefits are due to the implementation of digital technologies, which involve significant changes in a company's organizational structure as well as in employees' jobs, tasks and behaviors (Buchanan, Kelley, & Hatch, 2016). More specifically, the most common changes of DBT include paper-free work due to digitization; less need to analyze numbers and patterns with the help of Big Data analytics; changes in job designs and job characteristics due to utilization of robots; more mobile and agile work environments with online meetings, cloud storages and home offices; transparency; more cognitive and innovative tasks as some digital technologies can replace and automate simpler tasks; and more flexibility, meaning that work tasks and business departments are less isolated and have cross-functional interactions and interdependencies (Sharma & Nair, 2017). It can be seen that DBT causes tremendous changes in an organization and all of them affect the employees. Nevertheless, these changes are not always perceived as beneficial and consequently, they can lead to employees' resistance towards DBT. In fact, various employees are not willing to work with digital technologies due to numerous disadvantages, which in turn hinders the successful implementation of DBT. The typical disadvantages, leading to non-acceptance, are one's fear of losing the job (security issues), threats to the personal privacy due to more transparency, a new business culture, or higher rates of burnouts caused by the increased demand for always "being on" (Buchanan, Kelley, & Hatch, 2016). Whether an employee accepts DBT or not is expressed by his or her affective, cognitive and behavioral attitudes towards the accompanied

changes (Oreg, 2006). Indeed, acceptance behavior of change is a complex and tridimensional construct (Piderit, 2000).

It can be expected that DBT-resistant employees are older employees due to several reasons. Firstly, the survey by the *Sloan Center on Aging and Work* describes the late-career employees as the most resistant to change as well as the most reluctant to try new technologies, based on the perceptions of 220 organizations questioned in the survey (Minnich, 2011). Moreover, Fitzgerald et al. (2013) describe older people as technophobic, meaning that they try to avoid the usage of technologies. Secondly, they are said to have a pivotal influence on the success of DBT, because people aged above 55 account for a high share of the workforce in most countries. For instance, this age group makes up approximately 20% of the labor force in the US, Italy as well as in the UK, and nearly 25% of the German workforce (Ayar, Ebeke, & Shao, 2016). This corresponds to the fact that employees' non-acceptance of change, including DBT, leads to a failure rate of 70%. (Ewenstein, Smith, & Sologar, 2015). And thirdly, the Sloan survey also identified that younger employees are perceived as more creative and taking initiative (Minnich, 2011), which are characteristics of a digitally transformed business, indicating that younger employees are the most likely to accept DBT. Furthermore, these Millennials are called the "truly first 'digital native' generation" (Buchanan, Kelley, & Hatch, 2016, p. 2), meaning that they were raised with digital technologies and know how to operate them, whereas older employees usually have to get trained because they are used to traditional non-digital ways of working. All in all, based on these reasons, one could expect that older employees are more resistant to accept DBT compared to younger ones.

Hypothesis 1: *There is a negative relationship between chronological age and acceptance of DBT.*

II. Work Motives

Next to the hypothesis of identifying if there is a relationship between age and acceptance of

DBT, presumably a negative one, the thesis explains why people of different chronological ages accept or do not accept such business changes. Here, three work motives are investigated as mediators: growth, job security and social motives. According to the Cambridge Dictionary (2018), a motive is a "reason for doing something" and in this thesis, the work motives are seen as personal motivators of employees to work and perform well in the company. In general, work motivation is a popular topic among several researchers, especially because it is proven that older employees pursue different work motives than younger ones (Kooij et al., 2011; 2013). Kooij et al. (2011; 2013), Kooij and van de Voorde (2011), Kanfer and Ackermann (2004) have already analyzed some effects of age on the mentioned work motives. However, since today's society is rapidly changing, it is highly value-adding to investigate these effects again. This thesis builds on and extends the earlier research of Kooij et al. (2011; 2013) and Kooij and van de Voorde (2011) in which the associations between chronological age and work motives were analyzed. Here, these motives are additionally used as mediators in order to fill the literature gap about why people do not accept DBT, which has not been investigated before.

i. Growth Motive

In general, the growth motive is pursued by employees who prefer jobs and job designs, which provide opportunities to experience achievements as well as professional and personal developments (Kooij et al., 2013). Such employees are driven by reaching higher levels of functioning in their company (Kooij et al., 2011). Nevertheless, this includes challenges, for instance, the constant acquisition of new knowledge, attendance at trainings for reskilling, and the willingness to work with and adopt to new and agile environments (Kooij et al., 2011). Based on the Selection, Optimization, Compensation (SOC) Theory by Baltes and Baltes (1990), which is said to be commonly used by older people in order to maintain effective functioning and well-being (Moghimi et al., 2017), it is assumed that older people are less driven by the described growth motives. In general, the SOC Theory states that for successful

development and maximization, people usually make use of three actions: They select and prioritize personal goals, optimize the means and resources they have at hand, and compensate for lost resources (Moghimi et al., 2017). When people get older, they have to cope with age-related declines in certain personal resources, for example physical strength, intelligence or memory (Moghimi et al., 2017) and in turn, their focus shifts to maximizing the gains while minimizing those losses (Baltes & Baltes, 1990). Freund (2006) supports the SOC theory by stating that older people often choose to compensate, meaning they specifically try to maintain the resources they currently obtain, whereas younger adults are more interested in optimization activities, which include the acquisition of new knowledge and improving memory performance (Li et al., 2001) to get more resources. These theories can be transferred to the working environment, specifically to employee behavior. Therefore, younger employees seem to be more growth motivated as they are constantly trying to improve their knowledge, use all their abilities and challenge themselves with trainings. Furthermore, there are several authors who provide additional reasons for the lower interest in growth and learning shown by older employees (Kanfer & Ackermann, 2004). For instance, they argue that these older employees simply decided to stop learning and to only depend on their crystallized intelligence (Chen, 2012), or that they experience declining cognitive and intellectual capabilities in terms of memory performance (decreasing brain connections) as well as in understanding and processing novel information (Kanfer & Ackermann, 2004; Silverstein, 2008), which makes new knowledge acquisition a difficult challenge. According to Carstensen, Isaacowitz and Charles (1999), older people are not interested in novel information and perceive the corresponding activities as unpleasant. Overall, one can expect that older employees do not focus on these growth-related motives anymore, compared to younger ones.

Hypothesis 2a: There is a negative relationship between chronological age and growth motives.

Employees who pursue such growth motives are happy in companies that are constantly changing, flexible and agile. Indeed, these environments offer them the opportunity to use all their abilities in interdependent and cross-functional departments as well as to improve their knowledge and skills or acquire new ones with frequent trainings that are offered to keep up with the competition. Businesses that undergo DBT operate in such flexible and agile environments, which are constantly challenging their employees by implementing novel technologies, trainings, differing work tasks and closer value-chain collaborations (Prising, Sorenson, & Weinelt, 2018). Hence, because the companies that integrate DBT provide all the aspects that growth motivated employees strive for, namely usage of abilities, challenging work demands, new work designs as well as opportunities for personal growth and development (Kooij & van de Voorde, 2011; Kooij et al., 2013), it can be expected that these growth-motivated employees accept DBT.

Hypothesis 2b: There is a positive relationship between growth motives and the acceptance of DBT.

Overall, it is expected that growth motives mediate the relationship between age and acceptance of DBT. Combining the above-mentioned hypotheses leads to the assumption that older employees show a lower acceptance of DBT because they are not motivated by growth motives, which are positively connected to digitally transformed businesses.

Hypothesis 2c: The relationship between chronological age and acceptance of DBT is mediated by growth motives.

ii. Job Security Motive

The second work motive analyzed in this thesis is the job security motive. The motive focuses on job security, which Kooij et al. (2013) redefined to the importance of "job features and work outcomes that satisfy as well as safeguard an employee against the loss of material or

psychological desires related to one's general welfare at work" (p. 90). Thus, job security motives are pursued by employees who want to have a secured job position, good physical working conditions as well as good benefits (Kooij et al., 2013). In general, everyone is concerned and interested in job security; however, it is assumed that some of today's workers have different opinions about job security (Sirota & Klein, 2014). Indeed, young people are more flexible, obtain various skills and are willing to develop the necessary skills to find employment in another company (Sirota & Klein, 2014). They are ready and available to change positions within the company or even to move from company to company, showing that job security is not a priority for them (Sirota & Klein, 2014). Older employees, on the other hand, have difficulties acquiring new knowledge and skills due to their declines in conceptive and intellectual capabilities (Kanfer & Ackermann, 2004). As today's dynamic and ever-changing business environment demands employees to keep up with the trends and new business processes in order to help the whole company to be more productive and stay competitive, the need for job security, especially among older employees, is high. If an employee hinders the company to be productive and competitive, the consequences could be job dismissals by replacing older employees with younger, more flexible and knowledgeable ones. The SOC theory supports this assumption that older employees are more motivated by job security compared to younger ones, by stating that they select and allocate most resources to the maintenance and regulation of work-related losses, including job positions and good payments, but not to self-development or learning (Baltes, Staudinger, & Lindenberger, 1999). Hence, it is expected that there is a positive relationship between age and security motives.

Hypothesis 3a: There is a positive relationship between chronological age and job security motives.

As DBT involves the implementation of technologies that can automate specific processes, change job designs or replace traditional tasks (Sharma & Nair, 2017), it is common

belief among employees that DBT reduces employees' job security. For example, newspapers report that automation could lead to an elimination of 800 million jobs by 2030 (Vincent, 2017) or to rising inequalities, because low qualified workers are expected to struggle with the changing skill requirements or will get lower salaries (Arntz, 2016). In turn, many people fear that DBT will negatively affect their job designs by eliminating them (Bandy, 2016) or demanding that employees have to reskill and learn new skills, which is especially difficult for older ones. Hence, it can be expected that workers, who are concerned about their job position, benefits and working conditions, are highly reluctant to accept DBT in order to safeguard their job.

Hypothesis 3b: There is a negative relationship between job security motives and the acceptance of DBT.

Bringing these two associations together, it can be assumed that the negative relationship between age and acceptance of DBT can be explained by the positive relationship between age and job security motives, and by the negative relationship between job security motives and acceptance of DBT. In short, by the mediating effect of job security motives. This means that older employees are expected to show a lower acceptance of DBT, because they are motivated by a secure job position, which is negatively affected by DBT as it can destroy jobs, demand new skills or can request the adoption to agile work environments and new cultures.

Hypothesis 3c: *The relationship between chronological age and acceptance of DBT is mediated by job security motives.*

iii. Social Motive

Finally, the social motives can be described as the importance of job characteristics and work outcomes that involve the affiliation, interaction and collaboration with others in the work environment, including colleagues, subordinates, customers and clients (Kooij et al., 2011).

Employees perceive it as the opportunity to develop friendships at work or to interact and help other people (Porter, 1961). Social interactions are crucial for both young and old people. Nevertheless, the life span theory Socio-Emotional Selectivity Theory (SST) by Carstensen (1995), like the SOC theory, also came to the conclusion that the goals and work behaviors of people change over their life time. To the contrary, the SST concentrates specifically on the role of time and its predictions about the social goals of people (Carstensen, Isaacowitz, & Charles, 1999), instead of the three actions that ensure successful aging (Baltes & Baltes, 1990). According to the SST, older people increase their emphasis on selected and existing social relationships as a compensatory strategy for coping with the above-mentioned age-related cognitive and physical losses (Kooij et al., 2011). This means that when a person ages and perceives the personal life as more limited, he or she becomes more selective regarding its resource investments into social engagements, including time and energy for example (Carstensen, 1995). Their social motives' focus is said to shift from knowledge-related goals to goals related to feelings and emotional meaning (Carstensen, Isaacowitz, & Charles, 1999). As people can learn and acquire new resources from each other as well as share crucial information and skills, social relationships and large personal networks are popular among young people and employees, who are said to be future-oriented (Carstensen, Isaacowitz, & Charles, 1999). Hence, younger employees are expected to engage in acquiring new knowledge, meeting new people, forming multiple friendships and gaining new experiences. In comparison to older employees, who are more present-oriented and concerned about emotional regulations and satisfactions that are achieved by strengthening existing and selected relationships (Carstensen, Isaacowitz, & Charles, 1999). Based on the theory, one can expect that there is a negative relationship between age and social motives, because older employees are less concerned about making new friendships at work and more focused on intensifying their few existing social relationships in order to experience emotional satisfaction and meaning.

Hypothesis 4a: *There is a negative relationship between chronological age and social motives.*

The relationship between age and social motives is expected to be negative but the relationship between social motives and acceptance of DBT is presumably positive. This is due to the fact that digital technologies allow more communication and interactions within and across companies leading to the development of bigger networks and social ties. With digital technologies like video calls, online chats, online platforms, e-mails or cloud sharing, employees can constantly interact and share information, knowledge, experiences and skills with internal as well as external co-workers and partners (Buchanan, Kelly, & Hatch, 2016). Additionally, departments in a digitally transformed organization work interdependently and are less isolated from each other, facilitating even more interactions. Overall, DBT is said to have a positive impact on the way people connect and collaborate at work (Buchanan, Kelly, & Hatch, 2016). Employees can enlarge their social networks and share or learn novel information by frequently getting to know new people without investing substantial amounts of energy, effort or money. Hence, digital technologies provide them with the opportunity to develop new friendships, learn from others as well as to help them. These are aspects pursued by socially motivated employees, and thus, one can assume that these employees are highly likely to accept DBT in order to experience these benefits of social relationships.

Hypothesis 4b: There is a positive relationship between social motives and the acceptance of DBT.

According to the above-mentioned expectations, one can conclude that older employees do not accept DBT because they are less motivated by forming new social relationships and constantly interacting with others, which is a tremendous aspect of digital technologies. Hence, social motives to work are expected to mediate the relationship between age and acceptance of DBT by explaining why older employees show a lower willingness to accept DBT.

Hypothesis 4c: The relationship between chronological age and acceptance of DBT is mediated by social motives.

III. Perceived Organizational Support

Due to the fact that the acceptance of DBT is one of the most crucial aspects of its success, managers have to ensure that employees are open to digital technologies and to the corresponding organizational changes (Ewenstein, Smith, & Sologar, 2015). One implication for managers to reduce DBT-resistance and enhance the acceptance among employees could be perceived organizational support (POS). According to Eisenberger et al. (1986), the POS theory states that employees form general beliefs about how the organization values them and their contribution as well as about how much it cares about their well-being. If a company shows high POS levels by accepting its employees' work, values, goals, extra efforts and opinions, studies by Eisenberger et al. (1986; 2001) and Arshadi (2011) concluded that POS leads to higher organizational commitment in form of affective attachment, felt obligations, performance of standard job activities and extra-role activities. Moreover, meta-analytical findings show that psychological climate perceptions constantly and reliably predict a wide range of employee attitudes and behaviors (Benzer & Horner, 2015; Parker et al., 2003). These aspects lead to the presumption that positive perceptions of organizational support predict affirmative attitudes and behaviors towards DBT, due to the elicited organizational attachment.

More specifically, it is assumed that POS evokes a compensatory effect on the motives-acceptance relationship, meaning that high levels of POS facilitate acceptance particularly among employees who are less driven by growth and social motives and highly driven by job security ones. Similarly, when POS is low, it is compensated by high levels of growth and social motives and by low levels of job security motives. This assumption derives from the compensatory model, which is described by Hobfoll and Liebermann (1987) on the basis of a substitution hypothesis, contending "when a given resource is absent, a second resource may substitute for it" (p. 20). Such effects have already been investigated in a few contexts. For instance, in leadership theories it is stated that specific substitutes of leadership compensate the need for leaders (Kerr & Jermier, 1987), or Ho et al. (2018) concluded that cooperative

psychological climate compensates for low intrinsic motivation. Vallerand (2015) also declared that if specific motivations are lacking, extrinsic factors can still serve to fulfil psychological needs and predict behavior. Based on these findings, this study investigates POS as the extrinsic factor, which is expected to compensate for specific work motive levels that suppress the acceptance of DBT.

Indeed, concerning growth motives, which are presumably positively related to accepting DBT, one can expect that when there is a lack of this motive, high levels of POS will substitute for it and consequently, increase employees' willingness to accept. This coincides with the above-mentioned theory that high levels of POS increase employees' felt obligation to support the organization's DBT process. Eisenberger et al. (2001) proposes that such employees show their appropriated engagement by improving their performance or taking on extra-role activities, for instance by gaining new knowledge and skills, which are growth motive actions. Therefore, with high levels of POS being present, the shortcoming of the work motive is substituted by POS and low motivated employees feel obliged to facilitate the company's success by accepting DBT. Also lacks of social motives are expected to be compensated by high levels of POS. Here, it is reckoned to result in a higher willingness to accept DBT and its corresponding digital technologies that advance social interactions at work due to employees' increased affective attachment to the organization and to the coworkers (Eisenberger et al., 2001). On the contrary, concerning the employees highly driven by these two motives, they are expected to experience a smaller effect of POS. This is due to the fact that they are already willing to accept DBT, because it implements changes that they strongly value, for example agile work designs, reskilling, and expanding social networks. Moreover, in regard to job security motives, which are assumed to show a negative relationship with DBT-acceptance, it is expected that stronger job security motives are substituted by high levels of POS. Indeed, people driven by job security motives are assumed to show a high resistance to DBT as it involves the risks of job dismissal or the need for retraining due to automation, robots and other

digital technologies (Sharma & Nair, 2017). With high POS, such highly motivated employees are probably more likely to accept DBT, because POS makes them and their work feel valued. Additionally, they appreciate that they can receive support during the DBT process, instead of threats to their job position. Based on the theories, the following moderating hypotheses are developed:

Hypothesis 5a: POS and growth motives interact in predicting the acceptance of DBT such that the positive relationship between growth motives and acceptance of DBT is stronger when POS is low (as compared to high).

Hypothesis 5b: POS and job security motives interact in predicting the acceptance of DBT such that the negative relationship between job security motives and acceptance of DBT is stronger when POS is low (as compared to high).

Hypothesis 5c: POS and social motives interact in predicting the acceptance of DBT such that the positive relationship between social motives and acceptance of DBT is stronger when POS is low (as compared to high).

IV. Moderated Mediation Model

By taking a look at the complete conceptual model (figure 1), a moderated mediation model is observed. In regard to the above mentioned arguments and hypotheses, the following assumption is made: Older employees are most affected by high levels of POS because their presumed lack of growth and social motives or their desire for job security motives, which can all lower the acceptance of DBT, is compensated if they experience several aspects of organizational support. Hence, the moderated mediation hypothesis reads as follows:

Hypothesis 6: *POS moderates the indirect effect of chronological age on employees' acceptance of DBT such that the indirect effects of chronological age on employees' acceptance of DBT via (a) growth motives, (b) job security motives, and (c) social motives are stronger when POS is low (as compared to high).*

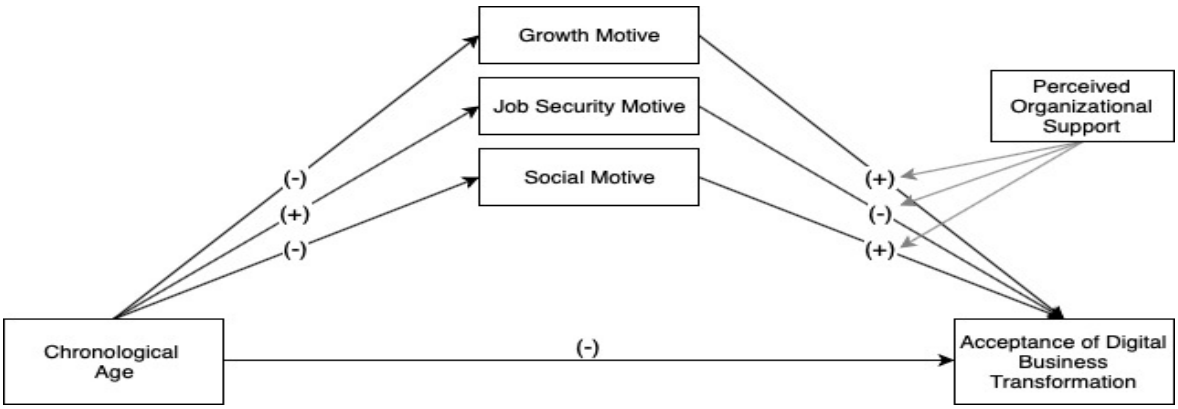


Figure 1 – Complete Conceptual Model with Hypothesised Relationships

Methodology

I. Context

The present study was conducted in German, highly age diverse organizations that are currently undergoing DBT. In general, businesses of all industries and countries could have been questioned as DBT is a crucial growth and performance catalyst for every business (OECD, 2017) and highly common nowadays. More specifically, a study by the International Data Group, Inc. (IDG) has shown that 89% of today's enterprises have plans to implement DBT or have already implemented some aspects of it (IDG, 2018). The industries with the most committed businesses are the financial service industries (93%), healthcare (92%), education (89%) and the high tech industries (88%) (IDG, 2018). These industries show the highest usage of Big Data analytics, mobile technologies as well as the usage of public and private clouds (IDG, 2018). For this thesis, the latter three industries are of major interest, because they are not only the most committed, but also the ones with the most age diverse workforces. Indeed, the education industry has 26% of its workforce aged above 55, the health care industry has 20% and the high tech industry has 18% (Wright, 2011) (Appendix A). Therefore, the study for this thesis was conducted in these three industries by sending out a survey to 154 employees. These employees showed high familiarity with digital technologies and DBT, which can be seen by their personal perception of the digitalization in their business: On a 7-point Likert scale, the mean was 5.16 (SD = 1.15), indicating that the participants perceived their businesses to be more than "slightly digitalized". Moreover, the industries are highly age diverse as the respondents' ages ranged from 22 to 68 years old. Questioning these employees was necessary

in order to ensure that they are somehow familiar with DBT and show different ages. However, due to the multitude of industries covered and the fact that almost all industries undergo DBT at the moment, the type of industry is not considered in the statistical tests.

II. Sample and Procedure

For this quantitative study, the primary source of data was a survey that was sent out to 154 employees working in the education, health care and high tech industries. 142 surveys (92%) were returned. However, three of the respondents stated that they are not currently employed at a company and seven indicated that they have been working at their company for less than one year, which makes them unsuitable participants for this study. Indeed, this is the due to the lack of attachment to the organization, which is attributable to their short time of employment (< 1 year). Hence, there are 132 surveys for the analysis, consisting of people who are currently employed in a business for more than one year and who are part-time or full-time employees with a work schedule of more than 20 hours per week. These characteristics ensure that they are attached to their company and its performance in today's dynamic work environment (Mowday, Porter, & Steers, 2015). Overall, 28% of the respondents work in the health care industry, 31.8% in the education industry, 37.1% in the high tech industry and 3% indicated to work in a different industry ("other"). The majority (58.3%) had been employed at the respective company for more than five years, 28.7% for three to five years and 12.9% for approximately two years. Moreover, the majority also stated to work more than 40 hours per week (51.6%), whereas 8.4% work between 20 and 30 hours and 40% work between 30 and 40 hours. Regarding the gender of the participants, 50.8% identified as men and 48.5% as women. One participant (0.8%) indicated a neutral sex. It was crucial for this study that there is a high age diversity within the sample as well as familiarity with DBT. These conditions are met as the age of the 132 participants ranged from 24 to 68 with a mean age of 46.59 years (*SD* = 12.76). Furthermore, they stated to be familiar with DBT and to perceive their business as more

than “slightly digitalized” (M = 5.16; SD = 1.15). Concerning this survey question, a one-sample t-test with a test value of 4 showed a p-value of 0.00, meaning that the perception of digitalization is highly significant and the chosen industries are highly suitable for the analysis; $t(131) = 11.57$, $p = 0.00$.

The survey consisted of 14 questions and investigated the work motives of employees of different chronological ages and their attitudes towards DBT as well as if they feel supported by their organization. Great emphasis was put on anonymity due to its stronger guarantee of privacy, which leads to more sincerity among the participants and lowers response bias (Burns & Burns, 2008). Some people received an online version of the survey (Qualtrics), whereas some people received a printed document. As people from the health care, education and high tech industry received the survey, a convenient sampling method was used to collect cross-sectional data (Burns & Burns, 2008). This method shows similarities with a clustering method, because the industries are seen as clusters, however, not all participants in one cluster were surveyed and part of the sample. The survey commenced with a filter question asking if the respondent is currently employed. If this was not the case, the respondent was redirected to the end of the survey, because he or she was not suitable for this study. The majority of the questions were based on measurement scales in form of 7-Point Likert scales which were used to answer the hypotheses (see below). First of all, the participants had to indicate their personal importance of the three work motives, followed by their perception of DBT and its change effects on their work, and finally they had to indicate their perceived organizational support. Some of the last questions were additional filter questions, whereas some of them were also used as control variables for the analysis (“Work Schedule”, “Employment Tenure”, “Industry”, and “Perceived Digitalization of Workplace”). Finally, the last two questions concerned the demographic statistics of the participants including the crucial question about the employees’ age and another control variable “Gender”.

III. Measures

Chronological age was operationalized as calendar age of the participants (Kooij et al., 2013), whereas the scales for the other variables of interest, namely work motives, acceptance of DBT and POS, were measured with 7-point Likert scales. The work motive scales investigated the participants' perceived importance of the given motive and they could select an option ranging from 1 ("Totally not important") to 7 ("Very important"). On the other hand, to measure the acceptance of DBT and participants' POS, these scales also ranged from 1 to 7, but indicated the extent to which the participants agreed with each item, from "Strongly disagree" to "Strongly agree". All questions were phrased in the present tense, because DBT and employees' willingness to accept it is a prevailing issue in today's highly competitive business environment (An overview can be found in Appendix B).

Work Motives Scales. Based on previous research conducted by Kooij et al. (2011; 2013) and Kooij and van de Voorde (2011) combined with a few of Porter's (1961) items, work motives were measured with twelve items among the three dimensions, namely growth, job security and social. The growth motives were ascertained by asking the respondents to indicate their perceived importance of the following four working conditions: "opportunity for development", "having challenging work", "opportunity to learn something new" and "ability to fully use the own skills and abilities" (Kooij et al., 2013). For this scale, a Cronbach's alpha test showed a strong reliability with an alpha of 0.978. The four items measuring the job security motives were a combination of Kooij's scale consisting of the importance of "a secured job position", "good physical working conditions" and "good benefits" (Kooij et al. 2011) supported by Porter's item asking about the importance of "feeling secure in the work position" (Porter, 1961). This scale was also deemed highly reliable with a Cronbach's alpha of 0.932. Finally, the social motive dimension was also represented by a combination of items from Kooij et al. (2011) and Porter (1961). It consisted of the perceived importance of "working with people" and "helping people or the society" (Kooij et al., 2011) as well as of the opportunity

"to give help to other people" and "to develop close friendships at work" (Porter, 1961). The Cronbach's alpha showed an alpha of 0.966, also indicating high reliability.

Acceptance Behavior towards DBT Scale. The scale to measure employees' acceptance of DBT was based on the change attitude scale from Oreg (2006), which measured employees' resistance to changes in their company. It consisted of 15 items separated into three dimensions, as it is a complex and tridimensional construct: affective, behavioral and cognitive (Piderit, 2000). The affective items investigated the participants' feelings towards the changes caused by DBT; the behavioral ones addressed their intentions to act against the changes; and the cognitive items explored the perceived harm or benefits (Oreg, 2006). As these scales were originally used for the analysis of employees' resistance towards change, several of the items were still negatively worded; hence, they had to be reversed for the scoring process of this study. In general, such a combination of positively and negatively formulated items allows for more valid and stronger measures (Burns & Burns, 2008). The Cronbach's alphas of the scales were all remarkably high, with α-values of 0.961, 0.959 and 0.935 respectively.

POS Scale. The POS scale was based on the short version of the Survey of Perceived Organizational Support developed by Eisenberger et al. (1986). It was a subset of the original 36-item version and involved 16 items that represent the feelings of employees, which they might have about the organization they work for. Seven of the items were stated negatively as well and were reversed in the later process. According to the Cronbach's alpha of these items ($\alpha = 0.967$), the used scale is highly reliable.

For all the analyses, several control variables were entered to ensure that only the above mentioned variables of interest reflect their uncontaminated relationships (Burns & Burns, 2018). Gender is one variable that was hold constant as a dummy variable. Indeed, it is proven that there are differences between genders concerning their attitude towards change (Wittig, 2012) as well as towards technology and their intention to use it (Padilla-Meléndez, Aguila-Obra, & Garrido-Moreno, 2013). Furthermore, employment tenure (in years) and work

schedule (in hours) were also control variables, here. In the beginning, they were used as filter variables to ensure that only the responses of participants with some form of attachment to the company were utilized in this study, whereas for the analyses, they had to be hold constant as they could influence the effect of other variables (Wittig, 2012). The years of employment can impact the acceptance of DBT because employees who are working for an organization for a longer period of time, are proven to be apathetic about change initiatives (Oreg, 2006). Moreover, as the amount of working hours per week is linked to one's involvement in the company, Oreg (2006) expects that higher involvement can lead to more resistance to change, especially when it involves negative or uncertain consequences, like DBT does.

IV. Analytical Strategy

With the survey aggregation tool "Qualtrics", the participants' responses on the measures of this study's conceptual model (Figure 1) were collected. Subsequently, the data was exported to the statistical program IBM SPSS Statistics in order to analyze them and test the hypotheses. Specifically, the computation tool PROCESS Macro, developed by Hayes (2013), was added to the program and provided a helpful tool to understand and test the theorized mediating and moderating relationships. As the relationships given in the conceptual model consist of different individual model templates identified by Hayes (2013), the analytical strategy of this study involved several model analyses. Firstly, a multiple mediation model with three mediators was used to investigate the direct and indirect effects of chronological age on the three work motives (H2, H3 & H4) as well as on the acceptance of DBT (H1). Based on Hayes' (2013) templates, this was tested with model 4, which provided insights into the relationship between chronological age and acceptance of DBT when mediated by work motives. Secondly, model 1 was utilized to analyze the three hypotheses (H5 a, b & c) assuming interaction effects of POS and work motive levels in form of a compensation role when predicting employees' acceptance

behaviors. Finally, the significance of the overall moderated mediation effect (H6) was tested with model 14 (Hayes, 2013). (Appendix C)

Results

I. Descriptive Statistics

The following table shows the descriptive statistics for all the variables used in this study as well as the variables that were controlled for. Due to the fact that the work motives, perceived organizational support and acceptance behaviors were surveyed with scales consisting of several items, they had to be summarized to their means by forming constructs.

Table 1: Descriptive Statistics of the Model

	Minimum	*Maximum*	*Mean*	*SD*
Model Variables (*Means*)				
Chronological Age	24	68	46.59	12.76
Growth Motive	1	7	4.50	2.22
Job Security Motive	1	7	5.98	1.24
Social Motive	1	7	4.15	2.04
POS	1.81	6.63	4.43	1.34
Acceptance Affective	1	7	4.67	1.97
Acceptance Behavioral	1	7	5.05	1.75
Acceptance Cognitive	1	7	4.75	1.69
Control Variables				
Gender	0	1	.51	.50
Work Schedule	20	50	37.27	6.45
Employment Tenure	2	36	10.18	8.88

Note. N = 132

The minimum and maximum means of the work motives and acceptance behaviors are exactly 1 and 7, which reveals that some respondents indicated all the extreme values of the 7-point Likert scales of one dimension. Moreover, the table shows the variables' means (M) and standard deviations (SD). The job security motive shows a mean high above the middle value of the 7-point Likert scale (= 4), indicating negatively skewed values. Additionally, the other variables of interest show high SDs (> 1), which suggest non-normal data. However, normally

distributed data is recommended for this research in order to avoid possible problems caused by the powers of non-sampling distributions (MacKinnon, Lockwood, & Williams, 2004). Therefore, the bootstrapping method was utilized when using the PROCESS macro for the moderation and mediation analyses. In the analyses of the study, bootstrapping helps to derive thoroughly representations of the sampling distribution of the effects and provides hypotheses tests with higher power than normal theory approaches (Hayes, 2013). Hence, a 95% confidence interval with a 5,000 bootstrapping sample was conducted to test the significance of the indirect effects of the three mediators and conditional effects of the moderator (Shrout & Bolger, 2002). Concerning the control variables, gender is a nominal variable (0 = male; 1 = female) with $M = 0.50$, $SD = 0.52$; work schedule has $M = 37.27$; $SD = 6.45$; and employment tenure shows $M = 10.18$; $SD = 8.88$.

The next table illustrates the bivariate correlations between all the model variables, including the control variables. One can clearly see that age has significant and negative relationships with the acceptance behaviors of digitalization ($r = -.71$, $p < .01$; $r = -.63$, $p < .01$; $r = -.67$, $p < .01$) as well as significant negative relationships with the mediating variables growth motive ($r = -.74$, $p < .01$) and social motive ($r = -.71$, $p < .01$). However, age shows a positive correlation with job security motives ($r = .38$, $p < .01$). This indicates that the older participants were less motivated by growth and social opportunities at work, neither did they seem to accept DBT. Nevertheless, they were motivated by a secure job position and salary.

Table 2: Pearson – Bivariate Correlations

Model Variables **(Means)**	1	2	3	4	5	6	7	8	9	10	11
1. Chronological Age	1										
2. Growth Motive	- .74**	1 (.98)									
3. Job Security	.38**	-.19*	1 (.93)								
4. Social Motive	-.71**	.82**	-.20*	1 (.97)							
5. Affective DBT	-.71**	.81**	-.26**	.75**	1 (.96)						
6. Behavioral DBT	-.63**	.77**	-.14	.71**	.92**	1 (.96)					
7. Cognitive DBT	-.70**	.77**	-.23**	.73**	.93**	.88**	1 (.94)				
8. POS	-.59**	.60**	-.27**	.56**	.82**	.73**	.80**	1 (.97)			
Control Variables											
9. Gender	-.13	.08	-.08	.20*	.07	.04	.04	.10	1		
10. Work Schedule	-.17	.37**	.02	.28**	.40**	.42**	.38**	.38*	.00	1	
11. Employment tenure (years)	.69**	-.54**	.21*	-.43**	-.52**	-.46	-.45**	.44**	-.20*	-.13	1

Note. N = 132. *p < .05 (two-tailed); **p < .01 (two-tailed) Cronbach's alpha between brackets

Table 2 also shows that there are strong and significant intercorrelations between the three acceptance behaviors. Indeed, affective behavior correlates to behavioral and cognitive behavior with $r = .92$, $p < .01$ and $r = .93$, $p < .01$. Due to this striking pattern among the three variables, a factor analysis (Principal Component Analysis) was conducted with all the 15 items of the three scales in order to investigate if one factor could load all these items. Here, according to the Kaiser's Rule, common factors are eigenvalues that are greater than 1 (Burns & Burns, 2008). For this factor analysis, one factor had an eigenvalue above 1 and also the component matrix indicated that 1 factor can be loaded on all 15 items. Hence, the items were combined and the tridimensional construct, proposed by Piderit (2000), was disregarded in this study. The new variable, which is used from now on, is called "acceptance behavior DBT" and it has a Cronbach's alpha of $\alpha = .981$. Its individual descriptive statistics are shown in table 3 and a new correlation table with the other variables was created, as well (table 4).

Table 3: Descriptive Statistics for the New Variable "Acceptance Behavior DBT"

	Minimum	*Maximum*	*Mean*	*SD*
Model Variables (*Means*)				
Acceptance Behavior DBT	1.20	7.00	4.82	1.75

Note. N = 132

Table 4: Pearson – Updated Bivariate Correlations

Model Variables (Means)	1	2	3	4	5	6	7	8	9
1. Chronological Age	1								
2. Growth Motive	- .74**	1 (.98)							
3. Job Security Motive	.38**	-.19*	1 (.93)						
4. Social Motive	-.71**	.82**	-.20*	1 (.97)					
5. Acceptance Behavior DBT	-.69**	.81**	-.22*	.75**	1 (.98)				
6. POS	-.59**	.60**	-.27**	.56**	.81**	1 (.97)			
Control Variables									
7. Gender (dummy)	-.14*	-.06	-.07	.19*	.03	.10	1		
8. Work Schedule	-.17	.37**	.02	.28**	.41**	.38**	-.01	1	
9. Employment tenure	.69**	-.54**	.21*	-.43**	-.50**	-.44**	-.21**	-.13**	1

Note. N = 132. *p < .05 (*two-tailed*); **p < .01 (*two-tailed*) Cronbach's alpha between brackets

Similar to table 2, this updated correlations table shows that there is a negative correlation between age and acceptance behavior of DBT (r = -.69, p < .01). Moreover, employees striving for growth and social interactions, show significant positive affiliations to the acceptance of DBT (r = .81, p < .01 and r = .75, p < .01), whereas employees concerned about job security reveal a negative, less significant correlation (r = -.22, p < .05).

II. Mediation Analyses

Hayes (2013) defines a simple mediation model as "any causal system in which at least one causal antecedent variable is proposed as influencing an outcome through a single intervening variable" (p. 78). Here, the antecedent variable was chronological age, the outcome was acceptance behavior towards DBT and the intervening variable was the work motive. As three work motives were investigated as mediation variables, a multiple mediation analysis was performed (Figure 2). This analysis allowed the testing of the first four hypotheses. The output of the model is represented in table 5, whereas some supporting histograms are given in appendix D. In the following tables, all p-values, which indiciate the significance level for this study's hypotheses, are one-tailed due to their directional assumptions.

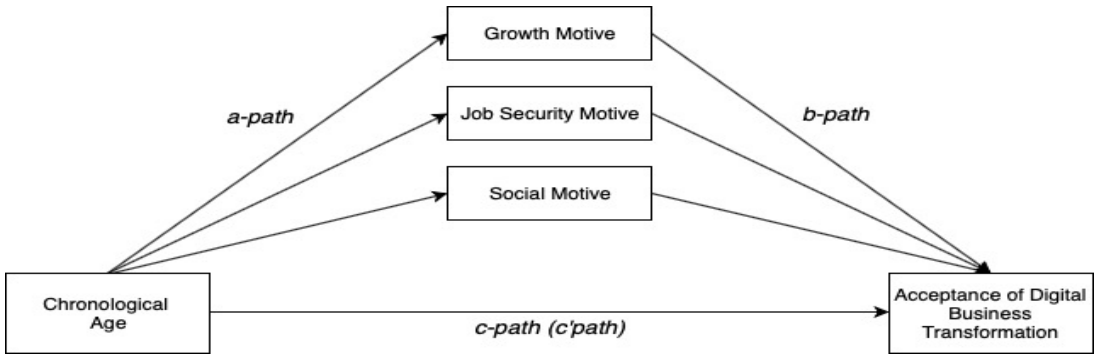


Figure 2 - Multiple Mediation Model

Concerning the first hypothesis, the c-path between chronological age and acceptance of DBT was analyzed. The statistics show a significant negative relationship between age of the participants and their acceptance behavior towards DBT ($F_{(4, 127)} = 43.44$, $p < .01$; $R^2 = .58$; $\beta = -.09$, $t(127) = -7.86$, $p < .01$, 95% CI [-.11; -.06]). Hence, Hypothesis 1 is supported due to this direct effect of the independent variable on the dependent variable (c-path).

The second hypothesis is divided into three sub-hypotheses. The first one H2a is depicted with the a-path between age and growth motives. One can identify a negative relationship between the independent and mediating variable, which is highly significant: $F_{(4, 127)} = 49.24$, $p < .01$; $R^2 = .61$; $\beta = -.12$, $t(127) = -8.65$, $p < .01$, 95% CI [-.14; -.09]). H2b is represented with the b-path between growth motive and acceptance of DBT. As it is a highly significant and positive relationship, the hypothesis is supported: $F_{(7, 124)} = 45.29$, p < .01; $R^2 = .72$; $\beta = .30$, $t(124) = 3.91$, p < .01, and 95% CI [.15; .45]. Finally, the third sub-hypothesis (H2c) is also supported, stating that there is a significant indirect effect between chronological age and acceptance through growth motives: $\beta = -.04$; (95% CI [-.06; -.02].

Hypothesis 3 investigates the job security motive as mediator of the relationship and also consists of three sub-hypothesis. According to the statistics, chronological age is significantly and positively related to the job security motive, hence supporting H3a: $F_{(4, 127)} = 6.14$, $p < .01$; $R^2 = .16$; $\beta = .05$, $t(127) = 4.20$, $p < .01$, 95% CI [.02; .07]. Even though the b-path between the job security motive and acceptance shows a negative relationship, it is not significant, leading to the rejection of H3b: $F_{(7, 124)} = 45.29$, $p < .01$; $R^2 = .72$; $\beta = -.04$, $t(124) = -.59$, p = .28, 95% CI [-.19; .10]. In turn, the overall indirect effect of this motive as the

mediator is insignificant, also resulting in a rejection of H3c, because the value zero falls within the bootstrapping CIs (β = .002; 95% CI [-.01; .01]) (Preacher & Hayes, 2008).

The last hypotheses that were analyzed with this multiple mediation model were the sub-hypotheses of H4 concerning the mediation effect of the social motive. H4a is supported because the values given in the output table indicate a significant negative relationship between age and the social motive ($F_{(4, 127)}$ = 40.16, p < .01; R^2 = .56; β = -.13, $t(127)$ = -9.50, p < .01, 95% CI [-.15; -.10]). The hypothesis between this motive and acceptance (H4b) is also supported at the 1% level due to the positive relationship with a small p-value of .0039: $F_{(7, 124)}$ = 45.29, p < .01; R^2 = .72; β = .23, $t(124)$ = 2.91, p < .01, 95% CI [.08; .39]. With the statistics (β = -.03, 95% CI [-.05; -.01]), the value zero does not pass through the CIs, indicating a significant and negative indirect effect between chronological age and acceptance of DBT through the mediation of the social motive (supporting H4c).

Table 5 also shows the c'-path, which is the direct effect of chronological age on acceptance of DBT under the mediation effects of the three work motives. It is a negative but insignificant relationship: $F_{(7, 124)}$ = 45.29, p < .01; R^2 = .72; β = -.02, $t(124)$ = -1.56, p = .06, 95% CI [-.05; .01]. This means that with the mediation of the work motives, the direct effect of chronological age on acceptance becomes insignificant. In other words, the model displays a full mediation by the two significant mediators, growth motive and social motive, with a significant total effect of β = -.09 ($t(124)$ = -7.86, p < .01), 95% CI [-.11; -.06].

Table 5: Regression Results for the Multiple Mediation

	Acceptance of Digital Business Transformation (H1)			
	β	*SE*	*t*	*p*
Constant	6.04**	.79	7.65	.00
Chronological Age (c-path)	-.09**	.01	-7.87	.00'
Gender	-.22	.21	-1.09	.28
Work Schedule	.08**	.02	5.02	.00
Employment Tenure	-.01	.02	-.42	.67
		R^2 = .58**		
		$F_{(4,127)}$ = 43.44**, p < .00		

	Growth Motive (H2)			
	β	*SE*	*t*	*p*
Constant	7.03**	.97	7.26	.00
Chronological Age (a-path)	-.12**	.01	-8.65	.00’
Gender	-.16	.25	-.64	.53
Work Schedule	.08**	.02	4.24	.00
Employment Tenure	-.01	.02	-.62	.54
			R^2 = .61**	
			$F_{(4,127)}$ = 49.24**, p = .00	

	Job Security Motive (H3)			
	β	*SE*	*t*	*p*
Constant	3.40**	.80	4.27	.00
Chronological Age (a-path)	.05**	.01	4.20	.00’
Gender	-.08	.21	-.38	.70
Work Schedule	.02	.02	1.05	.30
Employment Tenure	-.02	.02	-1.04	.30
			R^2 = .16**	
			$F_{(4,127)}$ = 6.14**, p = .00	

	Social Motive (H4)			
	β	*SE*	*t*	*p*
Constant	7.35*	.95	7.73	.00
Chronological Age (a-path)	-.13**	.01	-9.50	.00’
Gender	.50*	.25	2.04	.04
Work Schedule	.05*	.02	2.82	.01
Employment Tenure	.04	.02	1.99	.05
			R^2 = .56**	
			$F_{(4,127)}$ = 40.16**, p = .00	

	Acceptance of Digital Business Transformation (H2b, H3b, H4b)			
	β	*SE*	*t*	*p*
Constant	2.38*	.83	2.86	.01
Chronological Age (c’-path)	-.02	.01	-1.56	.06’
Growth Motive (b-path)	.30**	.08	3.91	.00’
Job Security Motive (b-path)	-.04	.07	-.59	.28’
Social Motive (b-path)	.23**	.08	2.94	.00’
Gender	-.30	.18	-1.68	.10
Work Schedule	.04**	.01	3.08	.00
Employment Tenure	-.01	.01	-.92	.36
			R^2 = .72**	
			$F_{(4,125)}$ = 45.29**, p = .00	

Note. N = 132. **p < 0.01, *p < 0.05 ’(one-tailed)

III. Simple Moderation Analyses

The goal of this analysis was to uncover the boundary conditions of the association between the work motives and acceptance behavior towards DBT (Hayes, 2013). In this study, POS was the moderator variable and it was expected to influence the magnitude of the causal effect of the respective work motive on acceptance of DBT (Hayes, 2013). More specifically, a compensation effect of POS was anticipated. As there were three work motives that had to be analyzed with model 1 (Hayes, 2013), three analyses were conducted. These hypothesized effects are displayed in the following figures and their statistical results are summarized in table 6 as well as in graph 1, 2 and 3.

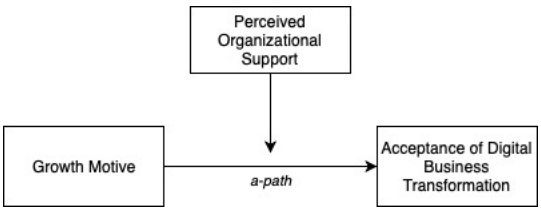


Figure 3 – Moderation Analysis Growth Motive

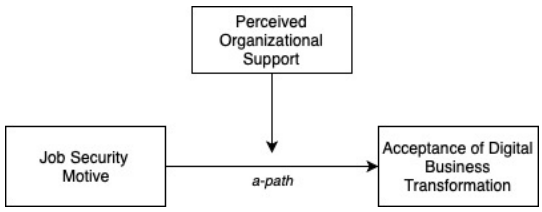


Figure 4 – Moderation Analysis Job Security Motive

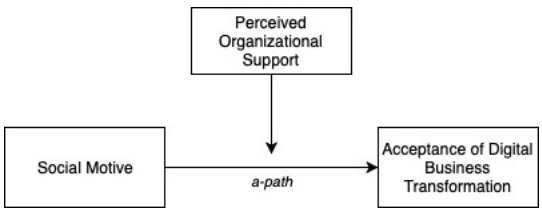


Figure 5 – Moderation Analysis Social Motive

The growth motive showed a significant and positive main effect on the acceptance of DBT (β = .79, $t(125) = 6.99$, $p < .01$), and also POS showed a positive effect (β = 1.04, $t(125) = 8.75$, $p < .01$), meaning that growth motives as well as a supporting organizational environment individually can lead to higher acceptance of DBT. Furthermore, the interaction effect of POS and the growth motive on the acceptance behavior of employees is negative (β = -.09, $t(125) = -3.82$, $p < .01$) and the bootstrapped CI (95% CI [-.14; -.04]) does not include a zero, indicating a high significance and supporting H5a. Graph 1 (a) displays this hypothesized interaction effect of the continuous variables: When POS is low, the relationship between growth motive and DBT acceptance is stronger. This is also represented by the conditional

effects: At low POS levels, the relationship is stronger with 0.52 ($p < .01$) compared to an effect of 0.22 ($p < .01$) at high POS levels. The argumentation that high levels of POS can compensate for low growth motives is displayed more clearly in graph 1 (b). It can be seen that little motivated employees are more willing to accept DBT when they experience organizational support. In line with the expectations, it shows that high levels of POS substitute the lack of growth motivation of employees and lead to an increased willingness to accept DBT. This is depicted by the steeper slope of the less growth motivated employees (low GM) and by their experience of a stronger POS effect (acceptance at low POS [2.62]; at high POS [4.85]). In comparison to employees driven by growth opportunities (high GM), who experienced a weaker effect of POS (acceptance at low POS [4.84]; at high POS [5.95]).

Above it was already stated that the job security motive had no significant mediating effect on accepting DBT. In addition to that, the interaction effect of POS on this relationship was not supported with an insignificant main effect ($\beta = -.39$, $t(125) = .29$, $p = .09$), POS effect ($\beta = .35$, $t(125) = .91$, $p = .18$) and an insignificant interaction at the 5% significance level ($\beta = .09$, $t(125) = 1.41$, $p = .08$). Additionally, the bootstrapping CI (95% CI [.00; .21]) encompasses the value zero and in combination with the high p-value, it is concluded that H5b cannot be supported. Graph 2 (a) and (b) show this insignificant effect of POS, which also does not employ a compensatory effect, because the acceptance behavior did not notably differ between low or high levels of job security motives.

Finally, H5c is supported because the statistical output and corresponding graphs (Graph 3 (a) and (b)) show a significant effect of POS on the relationship between the social motive and acceptance of DBT. Indeed, the interaction effect is highly significant with $\beta = -.12$, $t(125) = -4.78$, $p < .01$ and the CI (95% CI [-.17; -.07]) that does not include a zero. Graph 3 (a) displays that all employees show higher acceptance towards DBT with higher levels of POS present, which is due to the significant direct and positive effect of POS on DBT-acceptance ($\beta = 1.11$, $t(125) = 9.90$, $p < .01$). Additionally, a stronger effect of 0.55 ($p < .01$)

is depicted at lower levels of POS and a weaker effect of 0.17 ($p < .01$) when POS is higher. Hence, social motives can compensate for low POS levels, and vice versa: As displayed in graph 3 (b), a weaker effect of POS is realized when the employees are already driven by social motives (high SM: acceptance at low POS [4.74]; at high POS [5.70]) and a stronger one when the employees are less driven by social motives, explaining the negative interaction effect and steeper slope (low SM: acceptance at low POS [2.58]; at high POS [4.87]).

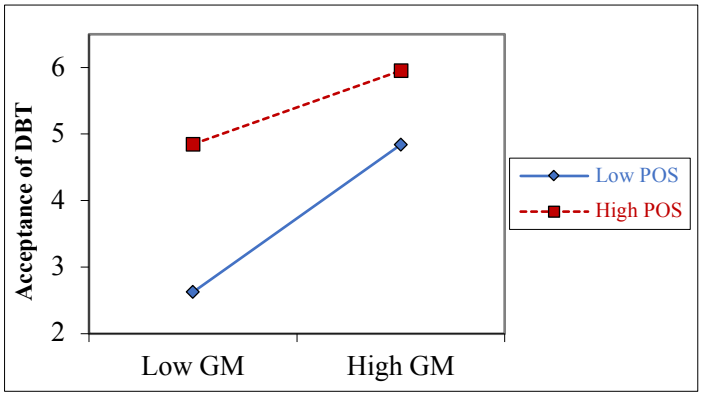
Table 6: Regression Results for the Simple Moderation

	Acceptance Behavior towards DBT – Growth Motive (H5a)			
	β	*SE*	*t*	*p*
Constant	-1.73**	.61	-2.84	.01
Growth Motive (GM)	.79**	.11	6.99	.00’
POS	1.04**	.12	8.75	.00’
GM x POS	-.09**	.02	-3.82	.00’
Gender	-.15	.13	-1.14	.25
Work Schedule	.01	.01	1.22	.23
Employment Tenure	.00	.01	-.00	1.00
			$R^2 = .84$**	
			$F_{(6,125)} = 111.57$**, p < .00	

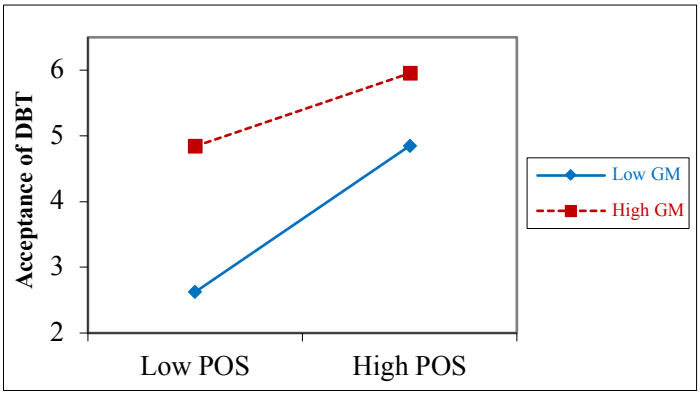
	Acceptance Behavior towards DBT- Job Security Motive (H5b)			
	β	*SE*	*t*	*p*
Constant	2.58	1.84	1.40	.16
Job Security Motive (JSM)	-.39	.29	-1.36	.09’
POS	.35	.39	.91	.18’
JSM x POS	.09	.06	1.41	.08’
Gender	-.24	.18	-1.38	.17
Work Schedule	.04**	.01	2.41	.02
Employment Tenure	-.04**	.01	-3.50	.00
			$R^2 = .71$**	
			$F_{(6,125)} = 49.60$**, p = .00	

	Acceptance Behavior towards DBT – Social Motive (H5c)			
	β	*SE*	*t*	*p*
Constant	-1.97**	.59	-3.36	.00
Social Motive (SM)	.90**	.12	7.59	.00’
POS	1.11**	.11	9.90	.00’
SM x POS	-.12**	.03	-4.78	.00’
Gender	-.37**	.13	-2.91	.00
Work Schedule	.02*	.01	2.30	.02
Employment Tenure	-.02*	.01	-2.30	.02
			$R^2 = .85$**	
			$F_{(6,125)} = 113.08$**, p = .00	

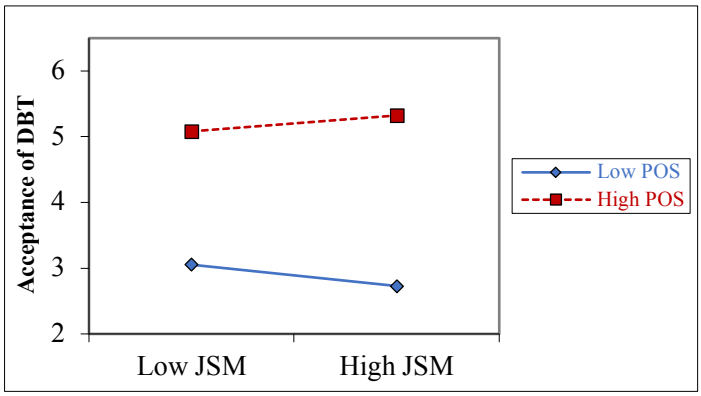
Note. N = 132. **p < 0.01, *p < 0.05 *’(one-tailed)*



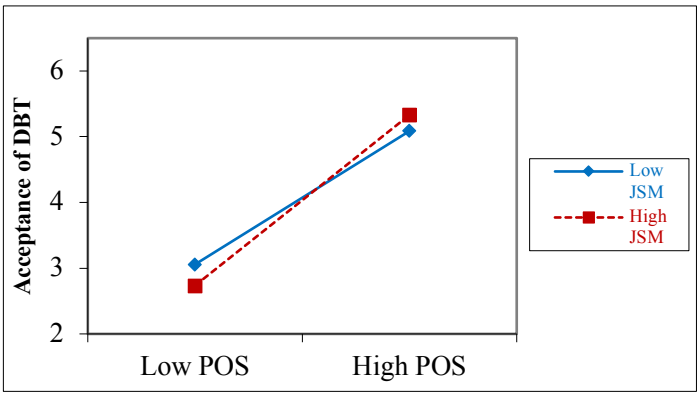
*Graph 1: (**a**) Interaction GM x POS*



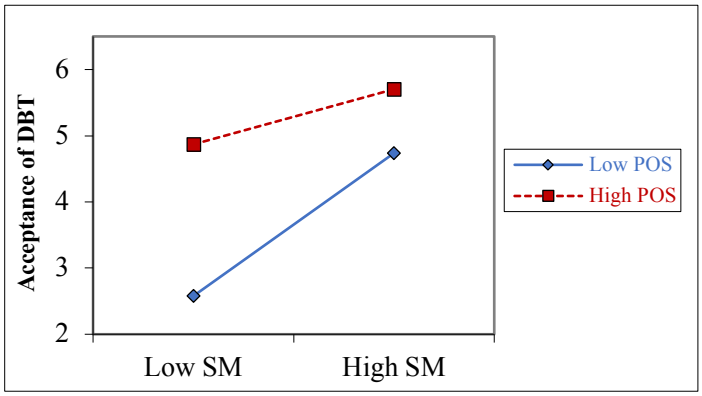
*(**b**) Interaction POS x GM*



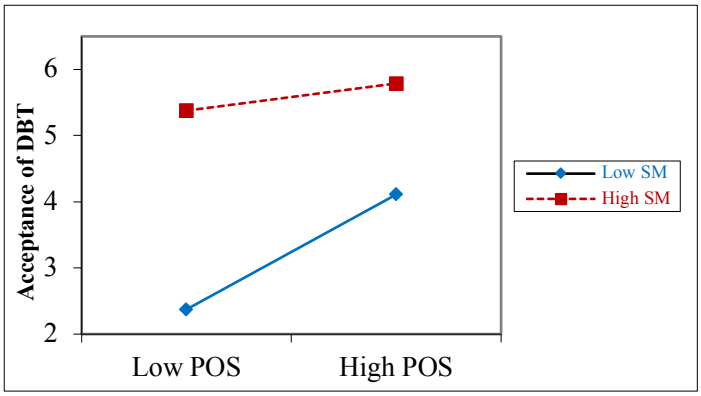
*Graph 2: (**a**) Interaction JSM x POS*



*(**b**) Interaction POS x JSM*



*Graph 3: (**a**) Interaction SM x POS*



*(**b**) Interaction POS x SM*

IV. Moderated Mediation Analysis

Now, the focus lies on the combination of the previous conducted analyses in order to test H6. In fact, a conditional process analysis was conducted, which considered the indirect and direct effects (mediation component) together with the conditional nature (moderation component) (Hayes, 2013) of the studied relationship between chronological age and acceptance of DBT. This moderated mediation is displayed in figure 6, where it is assumed that the work motives,

moderated by POS, mediate the association between chronological age and acceptance behavior.

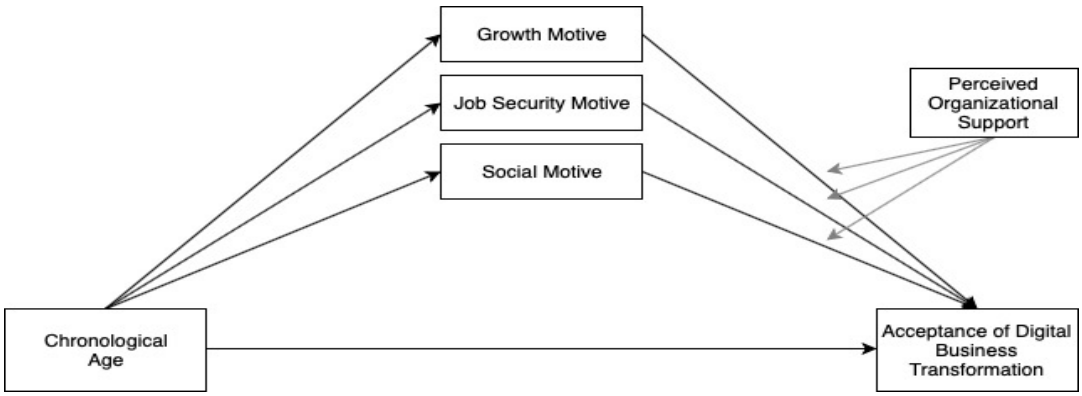


Figure 6 – Moderated Mediation – The Complete Conceptual Model

Concerning the conditional indirect effects of POS involving growth motives, its CIs include zero for low (95% CI [-.05; -.00]), and high (95% CI [-.04; -.00]), but exclude zero for medium levels of POS (95% CI [-.04; -.01]). The "Index of Moderated Mediation" provides a clearer result with the bootstrapping CI that involves a zero (95% CI [-.01; .01]), stating that there is no evidence for a moderated mediation with growth motive as the mediator and POS as the moderator. The same applies to the job security as mediator: the CIs of the conditional indirect effects at all levels of POS indicate insignificance because they include zeros (low (95% CI [-.01; .01]), medium (95% CI [-.05 .01]) and high (95% CI [-.00; .01])) as well as the bootstrapped CI given in the index (95% CI [-.00; .01]). For the social motive, the CIs for the low and medium POS are significant as zero does not fall within the limits (low (95% CI [-.07; -.02]), medium (95% CI [-.04; -.01])), but within the limits of the high levels of POS (high (95% CI [-.02; .01])). The index shows that in total the moderated mediation is also not significant respecting this mediator (95% CI [.00; .02]). With a lower limit of .0016 and an upper one of 0.0226, the model including social motive is approaching significance, because precisely speaking, the CI does not include zero. However, rounding to two decimal places, the lower limit falls on the value zero, indicating insignificance. Hence, with different data, collected with a larger sample or in a different industry for instance, this CI could become significant (Burns & Burns, 2008). Overall, as all sub-hypotheses of H6 are not supported, there

is no evidence for the hypothesized moderated mediation at the 95% confidence level. In addition, the model was also tested at the 90% confidence level, however, the output also depicts insignificant results (Table 7).

Table 7: Index of Moderated Mediation

Mediator		*95% Confidence Level*		
	Index	SE(Boot)	BootLLCI	BootULCI
Growth Motive	.00	.00	-.01	.01
Job Security Motive	.00	.00	-.00	.01
Social Motive	.01	.01	.00	.02
		90% Confidence Level		
Growth Motive	.00	.00	-.01	.01
Job Security Motive	.00	.00	-.00	.00
Social Motive	.01	.01	.00	.02

Note. N = 132

Discussion

This study analyzed two overarching trends that are currently affecting societies and especially leading to significant changes in today's businesses as well as how they operate. On the one hand, this is the demographical change, characterized by a shift in the age structure of societies and leading to an increasingly age diverse workforce (Tempest et al., 2002). Whereas on the other hand, the rapid innovation of new and pervasive technologies, constantly changing customer expectations and the intensive competition increase the need for changing the business operations by the means of digital technologies (OECD, 2017). The former trend has been analyzed in the past, however, managing the operations of a highly age diverse workforce is one of the most pressing challenges of this decade (Kooij & van de Voorde, 2011), and hence, still of utmost importance. The same applies to DBT: Its implications have been investigated scarcely, but they are fundamentally reshaping today's organizations and the way employees work (Yoo et al., 2012; Rayome, 2017). Therefore, as DBT influences the work of all employees, who show different ages, these two organizational changes appear to be highly dependent on each other. More specifically, this study investigated and found support for the assumptions that older employees are less willing to accept DBT. It also answers the question

why this is the case, based on the employees' growth and social motives to work, which are changing over life and mediating the age-acceptance relationship. Additionally, by testing the interaction effects of POS and work motives to predict DBT acceptance, the study suggests some aspects that managers can implement during the DBT process in order to ensure its success. Heretofore, all these assumptions and effects have been disregarded and scarcely researched, hence making this study highly value-adding by providing recent and empirically supported insights.

I. General Discussion of the Findings

As expected, the analysis of the survey responses indicate that chronological age is negatively related to employees' acceptance of DBT. For now, several authors have assumed that technology is disturbing to older employees (Gagnon & Dragon, 1998) and that they are technophobic (Fitzgerald et al., 2013). The outcomes of this study confirm these assumptions that older people are less willing to accept DBT. Furthermore, they extend the existing and limited knowledge pool by showing that older employees indicate resistance to work with digital technologies, which include robots, automated processes, Big Data analytics, flexible working cultures and online communication tools. There is a clear difference between the acceptance behavior of younger and older employees. This coincides with the fact that younger generations are "digital natives" (Buchanan, Kelley, & Hatch, 2016), meaning that they are raised with such technologies, know how to operate them and enjoy their applications (Bolser & Gosciej, 2015). Hence, they show a higher acceptance of DBT.

It was found that this association between chronological age and DBT-acceptance is fully mediated by growth motives and social motives. Here, the data supports the corresponding hypotheses that there are significant age-related decreases in these motives. This conforms with Kooij et al.'s (2011; 2013) and Kooij and van de Voorde's (2011) previous research. The decreases in growth motives while aging is explained with the SOC theory, stating that the older

an employee, the stronger the focus on maintaining one's effective functioning and well-being (Baltes & Baltes, 1990), instead of focusing on personal and professional development (Kooij et al., 2011; Kanfer & Ackermann, 2004). In fact, older employees have shown that they perceive such motives and the demands of DBT as unpleasant and not interesting, agreeing with the previously discussed arguments by Carstensen, Isaacowitz, and Charles (1999). This also corresponds with the statements given by Kanfer and Ackermann (2004), Silverstein (2004) and Chen (2012), who stated that older people in general experience declining cognitive and intellectual performances, making it difficult to understand, process and acquire novel knowledge. Secondly, concerning social motives, it was found that older employees are less motivated to work by opportunities that involve the interactions between employees. This supports the expectations based on the SST theory by Carstensen (1995), stating that if employees get older, their focus shifts from knowledge-related goals to feelings and emotional meanings. They are satisfied by engaging only into their few and already existing relationships (Carstensen, Isaacowitz, & Charles, 1999). And it holds true for this study as mainly younger respondents indicated a high perceived importance of social interactions at work, presumably in order to share knowledge and help others. Indeed, young and hence socially motivated employees also indicated high importance of helping others. This might be attributable to the industries covered in this study. Only digitally transforming industries were included (IDG, 2018) in which specifically the young and digital savvy employees have several meaningful skills and information about the implemented technologies. Hence, they show the highest ability and willingness to help other people (Shallenbarger, 2018), compared to older employees who cannot offer adjuvant help to their coworkers in these industries due to their lack of knowledge about modern technical skills (Buchanan, Kelley and Hatch, 2016)

Given the fact that digitally transformed businesses are highly agile and flexible, work creatively, consist of cross-functional departments and introduce frequently changing technologies (Prising, Sorenson, & Weinelt, 2018), which also require constant interactions

between employees as well as facilitate the building of extensive and global networks (Buchanan, Kelly, & Hatch, 2016), it is not surprising that growth and socially motivated employees show a higher acceptance of DBT. Indeed, DBT creates the optimal work environment for these highly motivated employees to fulfil their goals of personal and professional development or social networking. As expected, older employees are the least motivated by growth and social opportunities, and in turn this explains why they are resistant to DBT. It creates an environment in which they have to do all the activities that they perceive as least important, for instance acquire several new skills, which coincides with the fact that 64% of the businesses report the need for reskilling their personnel when implementing digital technologies (Prising, Sorenson, & Weinelt, 2018). Hence, in line with this study's assumptions, growth and social motives are involved in a chain of meaningful associations, resulting in the mediation of the negative association between chronological age and DBT. In addition, these associations make the total direct effect insignificant, implicating that this relationship is completely explained by these mediators.

However, the outcomes concerning the job security motives do not show a considerable mediation effect, which is inconsistent with the hypotheses. The first part of the hypothesis, namely the slightly positive effect of age on job security motives, is supported. Indeed, this conforms with the assumptions that everyone is concerned about their job security, but younger employees identify job security as slightly less important. According to Sirota and Klein (2014), they worry less about losing their jobs than older employees, because they are highly suitable to adapt and fit into various companies due to their extensive amount of skills and better cognitive ability to easily learn new ones. In comparison to older employees, who experience declines in their conceptive and intellectual capabilities, leading to difficulties in acquiring new knowledge and skills and consequently, new jobs (Kanfer & Ackermann, 2004). Moreover, this underlines the SOC theory stating that older employees allocate most resources to the maintenance and regulation of work-related losses, including jobs, good payments and other

benefits, but not to self-development and learning (Baltes et al., 1999). Nevertheless, the second part of the hypothesis, assuming a negative association between job security motives and acceptance of DBT, as well as the overall mediation of the job security motive, are not supported with this study's results. This contradicts with several newspaper articles (Arntz, 2016; Bandy, 2016; Vincent, 2016; Sharma & Nair, 2017), reporting eliminations of jobs due to automation and changing job characteristics, which comes with DBT. Hence, it seems like employees do not perceive DBT to have such negative effects on their job position or design. Accordingly, other authors argue that such reports could be rumors and employees do not have to be afraid of DBT changes. Brynjolfsson and McAfee (2015), for instance, state that human interactions are central to economic transaction and human needs can only be satisfied by other humans, not by machines. Moreover, some companies observed stable levels of employment after the implementation of digital technologies (Prising, Sorenson, & Weinelt, 2018), which can be attributable to the industries under investigation. Indeed, especially service industries, like the education and health care industries analyzed here, have experienced the highest increases in employment since the 1950s (The Economist, 2014).

Coming back to the significant relationships between growth motives and DBT-acceptance as well as social motives and DBT-acceptance, POS shows to have a highly influential effect on them. In general, POS seems to elicit an increase in the acceptance of DBT among all employees. Moreover, in line with the expectations, high levels of POS showed to be especially useful when employees were not motivated by growth and social aspects. Therefore, the assumptions are met that POS compensates the employees' lack of motivation to predict acceptance of DBT. This is due to the fact that POS increases employees' felt obligation to increase an organization's welfare and performance (Eisenberger et al., 2001). In this study, the felt obligation is regarding the successful implementation of DBT, as it can increase an organization's performance. Hence, the results indicate that even without these motives, they are willing to acquire new skills, accept different work designs and increase their

interactions with other coworkers, all by the means of digital technologies. This coincides with Vallerand's (2015) findings, concluding that shortcomings of specific personal motivations can be substituted by extrinsic factors, which still fulfil psychological needs and can lead to more affirmative acceptance behavior towards DBT. The employees, who are highly driven by these motives, are already willing to accept DBT, and thus, they are not experiencing strong effects of POS. As hypothesized, low levels of POS in a company amplify the relationships between growth or social motives and DBT-acceptance, making employees more willing to accept DBT the more they are driven by the motives.

II. Theoretical Contributions

Overall, this thesis and the conducted research are built upon the interesting demographic and structural changes happening in today's businesses. The outcomes identified several value-adding insights that contribute theoretically to existing publications. Moreover, the intercorrelations of the two changes, age-diversity and DBT, have been barely investigated before, and therefore, the study initiates the filling of this crucial research gap by presenting various novel relationships.

Firstly, the findings suggest that the older an employee, the less willing is he or she to accept the digital transformation of the business. This confirms the assumptions of Fitzgerald et al. (2013) and Buchanan, Kelley and Hatch (2016) stating that older people are technophobic, whereas younger ones are digital native and show a high affinity towards digital technologies. Moreover, it extends the outcomes of the research by the *Sloan Center on Aging and Work* (Minnich, 2011) by concluding that old employees, aged above 55, are the most resistant to work with such technologies. Additionally, it corresponds to the findings of De Koning and Gelderblom (2006) and Schleife (2006), which state that older employees dislike working with computers and complicated ICT systems, and adds that nowadays they also show higher resistance to working with robots, Big Data analytics, cloud systems and online communication

tools. This contribution is crucial because the older age groups make up a high share of the work force nowadays and can easily influence the successful implementation of DBT (Ayar, Ebeke, & Shao, 2016).

The question why employees do not accept to work with digital technologies is answered with the social and growth motives that employees of different chronological ages pursue. Initially, Kooij et al.'s (2011; 2013) and Kooij and van de Voorde's (2011) research on age and work motives was reinvestigated and it was ascertained that these motives are negatively related to chronological age. Here, the SOC and SST theory (Baltes & Baltes, 1990; Carstensen, Isaacowitz, & Charles, 1999) both are supported and their arguments are embraced in the working context. To conclude, older employees focus more on compensating their cognitive losses and strengthening their few social interactions. As DBT demands and facilitates personal development, reskilling, flexibility, transparency and constant social interactions with the help of digital technologies, it is consequential that younger employees, driven by growth and social motives, show a higher willingness to accept DBT.

In terms of job security motives, young and old employees are driven by job security and payments, confirming Sirota and Klein's (2014) assumptions. However, similar to Kooij et al.'s (2011) findings, the study concludes that older employees place some more importance on job security. Nonetheless, this work motive is not linked to employees' acceptance of DBT, leading to the generalization that people, employed at the education, high tech and health care industry, do not perceive DBT as a threat to their job position and salary.

Finally, a highly important finding and theoretical contribution is the compensatory function of POS. The study agrees with Eisenberger et al.'s (2001) proven theory that POS stimulates employees' affiliation towards the company. On the one hand, this is displayed here by an increased DBT-acceptance due to higher POS levels, but also by its interaction effect, which shows that it can compensate the lack of employees' growth or social motives and engage them to accept DBT. Indeed, the study has shown that the least driven employees experience

the strongest acceptance shift under high levels of POS. Overall, these are highly value-adding insights because they indicate the importance of POS in the DBT implementation process, especially when various employees are involved who show motivational shortcomings. They also contribute to Ho et al.'s (2018) conclusion that researchers should adopt a more holistic viewpoint by considering all predictor variables of DBT acceptance, which can operate jointly such that some can compensate or substitute for others.

III. Limitations and Future Research

In spite of these novel and interesting findings, the study involves a number of limitations, which should be considered.

Firstly, the data was collected by a convenient sampling method, whereby only the German education, health care and high tech industries were analyzed. It is an acceptable method, but it can also lead to possible biases. For example, employees of these industries can be notably different in terms of their characteristics. Because differing sampling groups can create a less representative sample (Burns & Burns, 2008), several control variables were used (gender, tenure and work schedule). However, for future research, more control variables should be involved, specifically the variables "social systems" and "educational attainment", because these are said to also influence employees' attitudes towards change (Wittig, 2012). In addition, it is advisable to also investigate other industries as well as other nationalities in order to generate more universal knowledge about employees' acceptance behavior towards DBT. When investigating work motives in other industries, the mediation effect of job security motives should be analyzed again, because service industries were included in this study which experienced significant increases in employment over the past decades (The Economist, 2014), leading to lower perceived risks of losing the job among these employees. Hence, the majority of service industry employees in this study could have biased the job security motive and it should be researched again in different industries currently undergoing DBT.

Secondly, this study is under risk of common method variance. Due to the fact that some constructs are of psychological nature and require the use of self-reports, it is difficult to eliminate this risk, here (Ho et al., 2018). Especially the variables POS, acceptance behavior and perceived digitalization of the workplace might be affected. However, in the future, these variables could be improved by implementing more objective measures based on perceptions of researchers or managers for example (Chan, 2011).

Thirdly, this study is one of the few studies focusing on these topics, which means that the present findings have to be used with caution until further research has been conducted. In future researches, it is advised to focus on collecting data from larger samples. Moreover, researchers can maybe even focus on analyzing longitudinal data, instead of the cross-sectional data used in this study, in order to generate insights about causality and how the attitude towards DBT of employees of different ages changes during the implementation of DBT.

Fourthly, the Cronbach's alphas from the measurement scales are all notably high, ranging from $\alpha = 0.932$ to $\alpha = 0.981$. On the one hand, this is favorable, because according to several authors, a reliability of $\alpha = 0.7$ or higher is acceptable (Nunnally, 1987) and if alpha is even above 0.8, it is highly acceptable to assume the homogeneity of the items (Burns & Burns, 2008). On the other hand, there are some researchers who address their concerns about alphas being higher than 0.95 (Clark & Watson, 1995; Tavakol & Dennick, 2011). Indeed, they say that the high intercorrelations among the measures could indicate highly redundant items and a narrow scale, which only measures a portion of the construct (Clark & Watson, 1995). These concerns should be taken into account given the high Cronbach's alphas of the study. Hence, it is advisable for future research to revise and adjust the measurement scales in order to lower the risk of redundancy.

Finally, the topic of this study is particularly novel and there are several aspects that still can and should be investigated. For instance, Kooij and van de Voorde (2011) and Kooij. et al. (2013) also analyzed other work motives, namely generativity and esteem, which could

additionally be considered as potential explanations (mediators) for older employees' lower willingness to accept DBT. Furthermore, researchers can try to find other compensatory or even complementary variables (moderators), in order to find value-adding aspects of how managers can ensure the success of DBT.

IV. Managerial Implications

DBT is affecting nearly all of the companies in today's dynamic business world, which is why it is of utmost importance that managers understand its effects on the firm and on the employees. During a DBT, it is not just the process that has to be thoroughly managed, but also the employees, because they are accused of leading to 70% of the failures (Ewenstein, Smith, & Sologar, 2015). This study helps managers to make sense of employees' resistance to DBT and provides insights into how they can ensure its success.

First of all, managers should realize that older employees, especially the ones aged above 55, show a negative affiliation towards accepting DBT. As firms become more age diverse and employ a high share of these old workers nowadays (Ayar, Ebeke, & Shao, 2016), they have to specifically focus on them in order to increase their willingness to accept DBT. The study has proven that older employees are less driven by growth motives. In fact, they have difficulties processing and acquiring new knowledge, which is required in the DBT process because employees have to learn how to operate with new digital technologies. Hence, it can be advantageous to offer different trainings to young and older employees, whereas older employees should receive on-the-job or self-induced trainings, which are proven to be more effective for them (Zwick, 2011). Moreover, younger employees, who are technical savvy, can also be asked to offer help and technical education to older ones. On the one hand, this satisfies younger employees' drives to socially interact and provide help to others. On the other hand, they can share their knowledge in order to train older employees with digital technologies,

which assist all employees in developing themselves and increasing their social interactions (Carstensen, 1995; Shallenbarger, 2018).

The study also reveals that the extrinsic factor POS can increase the willingness to accept DBT amongst all employees, but especially among little social or growth motivated ones. Indeed, these employees are found to experience tremendous positive effects from high levels of POS in a way that their acceptance behavior towards DBT strongly increases. Because the acceptance of DBT of all employees is crucial for the company and its performance, managers have to implement an environment in which they, and especially employees who show some shortages of these motives, feel valued. This involves the appreciation of their work, personal values, goals and extra efforts as well as listening to their needs and opinions (Eisenberger et al., 2001; Arshadi, 2011). Especially helpful could be frequent feedback sessions involving employees and managers. Moreover, managers have to make their work as interesting as possible and offer help when needed (Eisenberger et al., 2001). This help should be available at all times and especially when employees experience difficulties acquiring new knowledge and skills for operating with digital technologies. Additionally, Naujokaitiene, Tereseviciene and Zydziunaite (2015) stress the importance of a clear structure and vision for DBT that is communicated by the management to all employees, thus managers' POS initiatives should include transparency as well as frequent communication.

V. Conclusion

The current paradigm shift of digital business transformation is affecting all companies, nowadays. In addition, they are experiencing the demographic trend of an increasingly age diverse workforce, and due to the combination of these two organizational changes, companies are facing major challenges in terms of staying profitable, efficient and competitive. Because all employees and their acceptance play a crucial part during the implementation of DBT, this

study analyzed the relationship between chronological age of employees and their acceptance behavior towards DBT in order to identify the ones who are resistant and to explain why.

Overall, it has been empirically proven that chronological age has a negative direct effect on acceptance of DBT. This indicates that older employees are indeed technophobic and the least willing to accept the changes caused by DBT. Moreover, the study shows that this resistance towards working with digital technologies is fully explained by the mediators growth and social motives. These work motives are not just negatively related to chronological age, but also positively related to DBT-acceptance, hence creating a chain of meaningful associations. Moreover, the study realized that perceived organizational support provides a working environment in which especially the least motivated employees become more supportive of DBT and the corresponding changes. Hence, managers are advised to create an environment in which all, but especially these little driven employees feel valued, supported and integrated. To conclude, the study ascertained novel and interesting findings, which should be considered by today's age diverse companies that want to successfully implement DBT. Nevertheless, the literature gap is not completely filled yet. Hence, future research is recommended in order to shed more light on additional aspects of this crucial topic in form of investigating other mediator or moderator variables and provide further insights into why some employees, specifically older ones, are resistant to DBT.

References

Arntz, M. (2016). Digitization is unlikely to destroy jobs, but may increase inequalities. Retrieved from http://blogs.worldbank.org/jobs/governance/digitization-unlikely-destroy-jobs-may-increase-inequalities

Arshadi, N. (2011). The relationships of perceived organizational support (POS) with organizational commitment, in-role performance, and turnover intention: Mediating role of felt obligation. *Procedia-Social and Behavioral Sciences*, *30*, 1103-1108.

Ayar, S., Ebeke, C., & Shao, X. (2016). The impact of workforce aging on Euro area productivity. IMF Country Report, 16, 220.

Baltes, P. B., & Baltes, M. M. (1990). Psychological Perspectives on Successful Aging: The Model of Selective Optimization with Compensation. *Successful Aging: Perspectives from the Behavioral Sciences*, *1*(1), 1-34.

Baltes, P. B., Staudinger, U. M., & Lindenberger, U. (1999). Lifespan psychology: Theory and application to intellectual functioning. *Annual Review of Psychology, 50(1)*, 471-507.

Bandy, A. (2016). Will digitization eliminate jobs or redefine them. Retrieved from https://blogs.cisco.com/news/will-digitization-eliminate-jobs-or-redefine-them

Benzer, J., & Horner, M. (2015). A meta-analytic integration and test of psychological climate dimensionality. *Human Resource Management*, *54*, 457–482.

Boehm, S. A., Kunze, F., & Bruch, H. (2014). Spotlight on age-diversity climate: The impact of age-inclusive HR practices on firm-level outcomes. *Personnel Psychology, 67*(3), 667-704.

Bolser, K., & Gosciej, R. (2015). Millennials: Multi-generational leaders staying connected. *Journal of Practical Consulting*, *5*(2), 1-9.

Brynjolfsson, E., & McAfee, A. (2015). Will humans go the way of horses. *Foreign Affairs., 94*, 8.

Buchanan, J., Kelley, B. & Hatch, A. (2016). Digital workplace and culture: How digital technologies are changing the workforce and how enterprises can adapt and evolve. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/us-cons-digital-workplace-and-culture.pdf

Burns, R. B. & Burns, R. A. (2008). *Business Research Methods and Statistics Using SPSS*. Sage.

Cambridge Dictionary (2018). Meaning of "motive" in the English Dictionary. Retrieved from https://dictionary.cambridge.org/dictionary/english/motive

Carstensen, L. L. (1995). Evidence for a life span theory of socioemotional selectivity. *Current Directions in Psychological Science*, *4*, 151-156.

Carstensen, L. L., Isaacowitz, D. M., & Charles, T. S. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*(3), 165-181.

Chan, D. (2009). So why ask me? Are self-report data really that bad. *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences*, 309-336

Chen, R. (2012). Why old people have a hard time learning new things. Retrieved from https://www.embracepossibility.com/blog/why-old-people-have-a-hard-time-learning-new-things/

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, *7(3)*, 309-319.

de Koning, J., & Gelderblom, A. (2006). ICT and older workers: no unwrinkled relationship. *International Journal of Manpower, 27*(5), 467–490.

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, *71*(3), 500-507.

Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology*, *86*(1), 42-51.
Ewenstein, B., Smith, W. & Sologar, A. (2015). Changing change management. *McKinsey Digital*, 1-4.
Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2013). Embracing digital technology: A new strategic imperative. *MIT Sloan Management Review*, *55*(2), 1.
Freund, A. M. (2006). Age-differential motivational consequences of optimization versus compensation focus in younger and older adults. *Psychology and Aging, 21*(2), 240-52.
Gagnon, Y. & Dragon, J. (1989). The impact of technology on organizational performance. *Optimum*, *28*(1), 19-31.
Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford Press.
Ho, V. T., Kong, D. T., Lee, C. H., Dubreuil, P., & Forest, J. (2018). Promoting harmonious work passion among unmotivated employees: A two-nation investigation of the compensatory function of cooperative psychological climate. *Journal of Vocational Behavior*, *106*, 112-125.
Hobfoll, S. E., & Lieberman, J. R. (1987). Personality and social resources in immediate and continued stress resistance among women. *Journal of Personality and Social Psychology, 52*(1), 18–26. http://dx.doi.org/10.1037/0022-3514.52.1.18.
IDG. (2018). State of Digital Business Transformation. IDG' 2018 Digital Business research.
Kanfer, R., & Ackerman, P. L. (2004). Aging, adult development and work motivation. *Academy of Management Review, 29*(3), 440-458.
Kerr, S., & Jermier, J. M. (1978). Substitutes for leadership: Their meaning and measurement. *Organizational behavior and human performance*, *22*(3), 375-403. https://doi.org/10.1016/0030-5073(78)90023-5
Kooij, D. T. A. M., de Lange, A. H., Jansen, P. G. W., Kanfer, R. & Dikkers, J. S. E. (2011). Age and work-related motives: Results of meta-analysis. *Journal of Organizational Behavior, 32*(2), 197-225. https://doi.org/10.1002/job.665
Kooij, D., & Van de Voorde, K. (2011). How changes in subjective general health predict future time perspective, and development and generativity motives over the lifespan. *Journal of Occupational and Organizational Psychology, 84*(2), 228-247.
Kooij, D. T. A. M., de Lange, A. H., Janse, P. G. W., & Dikkers, J. S. E. (2013). Beyond chronological age. Examining perceived future time and subjective health as age-related mediators in relation to work-related motivations and well-being. *Work and Stress, 27*(1), 88-105. https://doi.org/10.1080/02678373.2013.769328
Li, K. Z. H., Lindenberger, U., Freund, A. M., & Baltes P. B. (2001). Walking while memorizing: Age-related differences in compensatory behavior. *American Psychological Science, 12*(3), 230 – 237.
MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research*, *39*(1), 99-128.
McAdams, D. P., & de St. Aubin E. (1998). Generativity and adult development. How and why we care for the next generation. *Washington, DC: American Psychological Association.*
Minnich, C. (2011). Older workers seen as more loyal but more resistant to change. Retrieved from http://www.bc.edu/research/agingandwork/archive_news/2010/2010-01-25_s_e.html
Moghimi, D., Zacher, H. Scheibe, S., & van Yperen N. W. (2017). The selection, optimization, and compensation model in the work context: A systematic review and meta-analysis of two decades of research. *Journal of Organizational Behavior, 38*(2), 247-275. https://doi.org/10.1002/job.2108

Mowday, R. T., Porter, L. W., & Steers, R. M. (2013). *Employee—organization linkages: The psychology of commitment, absenteeism, and turnover*. Academic press.
Naujokaitiene, J., Tereseviciene, M., & Zydziunaite, V. (2015). Organizational support for employee engagement in technology-enhanced learning. *SAGE Open*, *5*(4), 1-9.
Nunnally, J. C. (1978). Psychometric theory (2nd edit.). McGraw-Hill. *Hillsdale, NJ*.
OECD. (2017). Key issues for digital transformation in the G20. Retrieved from https://www.oecd.org/g20/ key-issues-for-digital-transformation-in-the-g20.pdf
Oreg S. (2006). Personality, context and resistance to organizational change. *European Journal of Work and Organizational Psychology, 15*(1), 73-101. https://doi.org/10.1080/13594320500451247
Padilla-Meléndez, A., Aguila-Obra, A. R., & Garrido-Moreno, A. (2013). Perceived playfulness, gender differences and technology acceptance model in a blended learning scenario. *Journal of Computer and Education*, *63*, 306-317. https://doi.org/10.1016/j.compedu.2012.12.014
Parker, C. P., Baltes, B. B., Young, S. A., Huff, J. W., Altmann, R. A., Lacost, H. A., & Roberts, J. E. (2003). Relationships between psychological climate perceptions and work outcomes: A meta-analytic review. *Journal of Organizational Behavior, 24*, 389-416. http://dx.doi.org/10.1002/job.198.
Piderit, S. K. (2000). Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change. *Academy of Management Review*, *25*(4), 783 – 794.
Preacher, K.J. and Hayes, A.F. (2008) Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–91. https://doi.org/10.3758/BRM.40.3.879
Prising, J., Sorenson A., & Weinelt, B. (2018) Digital transformation initiative: Maximizing the return on digital investments. Retrieved from http://www3.weforum.org/docs/DTI_Maximizing_Return_Digital_WP.pdf
Porter, L. W. (1961). A study of perceived need satisfactions in bottom and middle management jobs. *Journal of Applied Psychology, 45*(1), 1-10.
Rayome, A. D. (2017). Eight obstacles to overcome in your digital transformation journey. Retrieved from https://www.zdnet.com/article/eight-obstacles-to-overcome-in-your-digital-transformation-journey/
Schleife, K. (2006). Computer use and the employment status of older workers – an analysis based on individual data. *Labour, 20*(2), 325–348.
Schug, D. (2018). Digitalization doesn't just mean technological changes. Retrieved from https://www.foodengineeringmag.com/articles/97558-digitalization-doesnt-just-mean-technological-changes
Shallenbarger, S. (2018). In a Digital era, How can Older Workers Stay in the Game? Retrieved from https://www.wsj.com/articles/how-can-older-workers-stay-in-the-game-1526999016
Sharma, P., & Nair, C. (2017). Clarity on digital labor: Rise of the robots. Retrieved from https://assets.kpmg.com/content/kpmg/pdf/clarity-on-digital-labor-en.pdf
Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods, 7*(4), 422-445.
Silverstein, M. (2008). Meeting the challenges of an aging workforce. *American Journal of Industrial Medicine, 51*(4), 269-280. https://doi.org/10.1002/ajim.20569
Sirota, D., & Douglas, K. (2014). Dealing with Job Security: What it really tells you about a company. Retrieved from https://www.tlnt.com/dealing-with-job-security-what-it-tells-you-about-a-company/
Tavakol, M., & Dennick, R. (2011). Making Sense of Cronbach's Alpha. *International Journal of Medical Education*, *2*, 53-55.

Tempest, S., Barnatt, C., & Coupland, C. (2002). Grey advantage: New strategies for the old. *Long Range Planning, 35*(5), 475-492.
The Economist. (2014). The future of jobs: The onrushing wave. *The Economicst*. Retrieved from https://www.economist.com/briefing/2014/01/18/the-onrushing-wave
Vallerand, R. J. (2015). The psychology of passion: A dualistic model. New York: Oxford University Press.
Vincent, J. (2017). Automation threatens 800 million jobs, but technology could still save us, says reports. Retrieved from https://www.theverge.com/2017/11/30/16719092/automation-robots-jobs-global-800-million-forecast
Wittig, C. (2012). Employees' reaction to organizational change. *OD Practitioner*, *44*(2), 23-28.
Wright, J. (2011). Which industries have the oldest workers? Retrieved from https://www.economicmodeling.com/2011/05/10/which-industries-have-the-oldest-workforces/
Yoo, Y., Boland, R. J., Lyytinen, K., & Majchrzak, A. (2012). Organizing for innovation in the digitized world. *Organization Science*, *23*(5), 1398-1408.
Zwick, T. (2011). Why training older employees is less effective. ZEW Discussion Paper No. 11 046, Centre for European Economic Research, Mannheim.

Appendix

Appendix A: The Industries – Age Diversity and Digitalization Progress

Industry	Distribution of workers …			**DBT adaption**
	…younger than 45	…age 45 – 55	**…above 55**	
Education	48%	26%	**26%**	**89%**
Health Care	55%	25%	**20%**	**92%**
High Tech	59%	23%	**18%**	**88%**

Wright (2011) and IDG (2018)

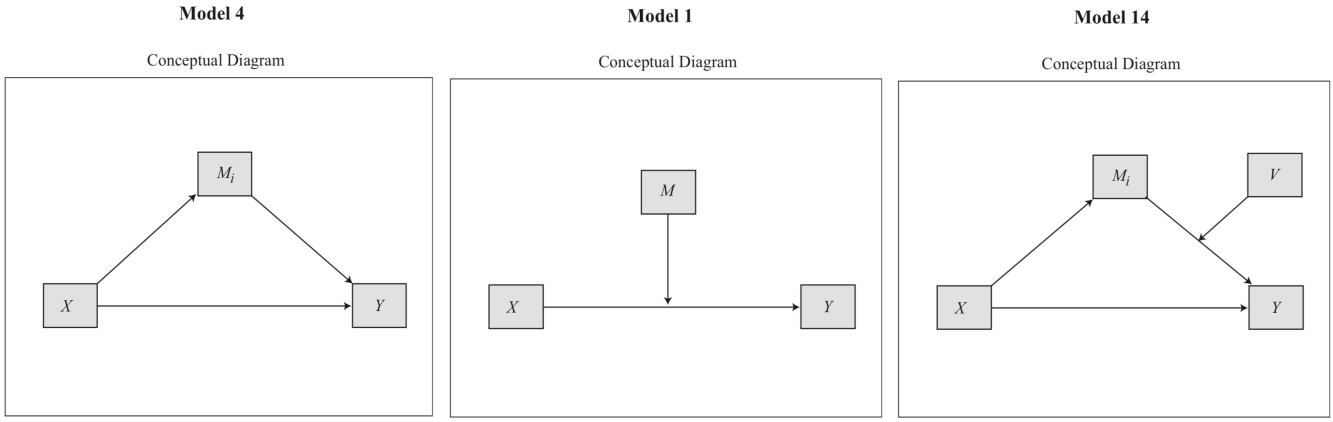
Appendix B: Items for the Different Measurement Scales

Work Motives	(Kooij et al., 2011; Kooij et al., 2013 & Porter, 1961)
Growth Motives	How important is the opportunity for personal development for you?
	How important is having challenging work for you?
	How important is the opportunity to learn something new for you?
	How important is being able to fully use your skills and abilities for you?
Job Security Motives	How important is the security of your current job position for you?
	How important are good physical working conditions at work for you?
	How important are good benefits (salary, bonus, insurance,…) for you?
	How important is the feeling of security in your work position for you?
Social Motives	How important is working with people for you?
	How important is helping people or contributing to society for you?
	How important is the opportunity for you to give help to other people at work?
	How important is the opportunity for you to develop close friendships at work?

Acceptance of Digital Business Transformation	(Eisenberger et al., 1986)
Affective	I am afraid of the changes caused by the digitalization of my company. (R)
	I have a bad feeling about the changes related to the digitalization of my company. (R)
	I am excited about the changes caused by the digitalization of my company.
	The changes caused by the digitalization of my company make me upset. (R)
	I am stressed by the changes related to the digitalization of my company. (R)
Behavioral	I am looking for ways to prevent the digitalization of my company. (R)
	I am protesting against the digitalization of my company. (R)
	I am complaining about the changes caused by the digitalization to my colleagues. (R)
	I am presenting my objections regarding the digitalization of my company to the management. (R)
	I am speaking rather highly of the changes related to the digitalization of my company to others.
Cognitive	I believe that the changes caused by the digitalization of my company will harm the way things are done here. (R)
	I think that the digitalization of my company is a negative thing. (R)
	I believe that the changes caused by the digitalization of my company will make my job harder. (R)
	I believe that the changes caused by the digitalization of my company will benefit the organization.
	I believe that I can personally benefit from the changes caused by the digitalization of my company.

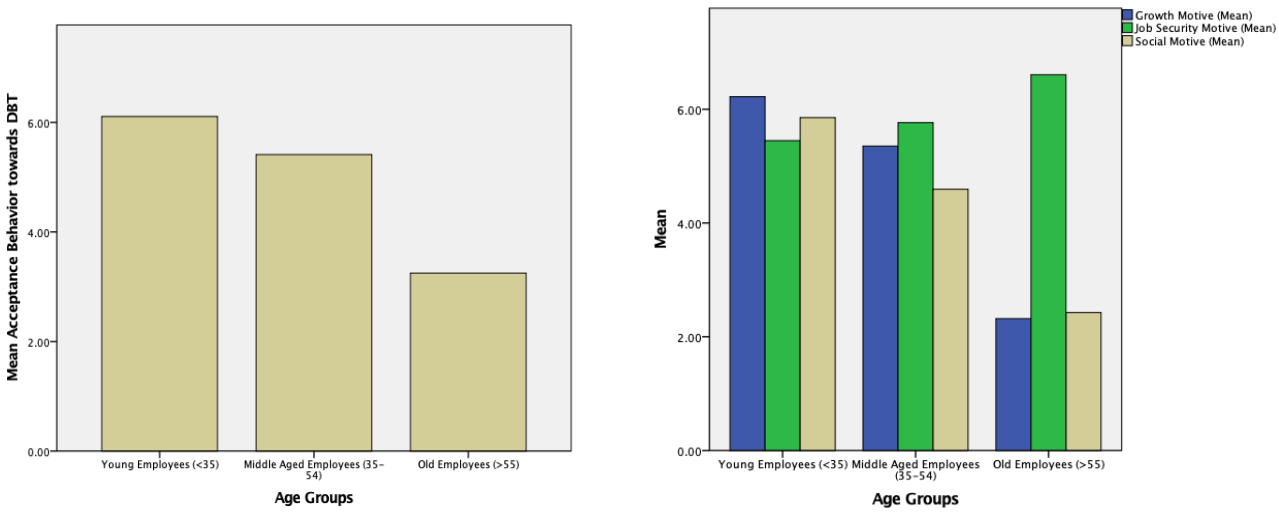
Perceived Organizational Support	(Oreg, 2006)
	The organization values my contribution to its wellbeing.
	If the organization could hire someone to replace me at a lower salary it would do so. (R)
	The organization fails to appreciate any extra effort from me. (R)
	The organization strongly considers my goals and values.
	The organization would ignore any complaint from me. (R)
	The organization disregards my best interests when it makes decisions that affect me. (R)
	Help is available from the organization when I have a problem.
	The organization really cares about my well-being.
	Even if I did the best job possible, the organization would fail to notice. (R)
	The organization is willing to help me when I need a special favor.
	The organization cares about my general satisfaction at work.
	If given the opportunity, the organization would take advantage of me. (R)
	The organization shows very little concern for me. (R)
	The organization cares about my opinions.
	The organization takes pride in my accomplishments at work.
	The organization tries to make my job as interesting as possible.

Appendix C: Hayes' Model Templates



Hayes (2013)

Appendix D: Histograms – Age and Acceptance of DBT/ Work Motives



Appendix E: Official Statement of Originality

By signing this statement, I hereby acknowledge the submitted work project titled "The Effect of Chronological Age on Employees' Acceptance of Digital Business Transformation: A Moderated Mediation Study of Work Motives and Perceived Organizational Support." to be produced independently by me, without external help.

Wherever I paraphrase or cite literally, a reference to the original source (journal, book, report, internet, etc.) is given.

Place: Maastricht

Date: 4th of January 2019

First and last name: Kathleen Isabell Schulz

Study: Master International Management

Course/Skill: Work Project

Student ID: 31794

Signature