

University of Groningen

Digital Anxiety in the Finance Function

Firk, Sebastian; Gehrke, Yannik; Wolff, Michael

Published in:
Journal of Management Accounting Research

DOI:
[10.2308/JMAR-2021-056](https://doi.org/10.2308/JMAR-2021-056)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2024

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Firk, S., Gehrke, Y., & Wolff, M. (2024). Digital Anxiety in the Finance Function: Consequences and Mitigating Factors. *Journal of Management Accounting Research*, 36(1). <https://doi.org/10.2308/JMAR-2021-056>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Digital Anxiety in the Finance Function: Consequences and Mitigating Factors

Sebastian Firk

University of Groningen

Yannik Gehrke

Michael Wolff

University of Goettingen

ABSTRACT: This study investigates digital anxiety as a potential barrier to the digital transformation of the finance function. To embrace digital transformation, the finance function crucially relies on the engagement of its employees. However, due to this transformation, these employees face high uncertainty regarding future job demands, possibly invoking digital anxiety. Based on a survey of 1,038 finance employees from a multinational business group and rich qualitative insights, we first indicate the relevance of digital anxiety in the finance function. Our results further show that digital anxiety is negatively associated with work engagement. Finally, we find that employees who have taken part in digital trainings, who are surrounded by digitally savvy peers, and who work under a transformational leader are associated with less digital anxiety. Our study highlights the need to carefully consider employee emotions to digitally transform the finance function and outlines means for organizations to cope with these emotions.

Keywords: finance function; digital transformation; anxiety; emotions.

I. INTRODUCTION

Academics and practitioners agree that digital technologies provide immense potential for the finance function (Chandra, Plaschke, and Seth 2018; Quattrone 2016). For instance, data analytics tools can improve decision-making support by identifying patterns in disparate data sources (Lawson and Hatch 2020; Chandra et al. 2018), whereas automation technologies can help reduce the resources needed for traditional routine tasks, such as data consolidation (Agrawal, Eklund, Waite, and Woodcock 2020; Frey and Osborne 2017). However, practitioners consistently indicate that finance functions struggle with the change processes necessary to effectively leverage the potential of digital technologies (Chandra et al. 2018; Hippe, Pellens, Roos, Oberauer, and Gall 2022). Möller, Schäffer, and Verbeeten (2020) warn that the resulting lack of progress with the digital transformation bears the risk of being “a relative latecomer” and thus of losing status compared with other functions (e.g., marketing or operations). This situation has prompted several calls for more empirical insights into the barriers and drivers of the digital transformation of the finance function (Möller et al. 2020; Moll and Yigitbasioglu 2019).

To date, however, the discussion is mainly taking place on a conceptual level (Knudsen 2020), and only few exceptions have focused on empirically investigating the drivers of the digital transformation of the finance function.

We are grateful to Michal Matějka (editor) and two anonymous referees for their constructive suggestions. We further appreciate feedback by participants at the 2020 Annual Meeting of the Academy of Management in Boston, the 2022 Annual Conference for Management Accounting Research in Vallendar, as well as the 2022 Accounting Research Seminar at the Catholic University of Milan. We also thank Jacob Reiley, Irene Eleonora Lisi, Alexander van Slooten, and Lucia Bellora-Bienengraber for their valuable comments. Finally, we are thankful to the CFO and senior managers at the company who granted us access to the research site and its employees.

Sebastian Firk, University of Groningen, Faculty of Economics and Business, Department of Accounting and Auditing, Groningen, The Netherlands; Yannik Gehrke and Michael Wolff, University of Goettingen, Faculty of Business and Economics, Chair of Management and Control, Goettingen, Germany.

Editor's note: Accepted by Senior Editor Michal Matějka.

Submitted: November 2021
Accepted: April 2023
Early Access: August 2023

These exceptions have mainly focused on the technical prerequisites for the digital transformation of the finance function (e.g., Bergmann, Brück, Knauer, and Schwering 2020; Knauer, Nikiforow, and Wagener 2020). Although such technical aspects could be a major barrier, the focus on technical prerequisites somewhat neglects the crucial role of employee emotions. Emotions emerge in response to trigger events, such as the digital transformation, and, simultaneously, shape the behaviors of individuals and thereby the outcomes of the change processes that are responsible for the emotions (for an overview of emotions in accounting research, see Repenning, Löhlein, and Schäffer 2022). This bidirectional character of emotions and the crucial role of employees in the enactment of digital technologies makes it important to integrate the role of employee emotions into the debate about the (limited) progress of the digital transformation in the finance function (Repenning et al. 2022).

In this study, we focus on digital anxiety, a fear-based emotion, that captures the worries, concerns, and fears related to the diffusion of digital technologies. Digital anxiety could be particularly relevant as it can likely arise as a response to large uncertainties in the digital transformation of the finance function and anxiety can be linked to employee prevention behaviors (e.g., Bala and Venkatesh 2016). Digital anxiety could thus unfold as a barrier to the digital transformation of the finance function. It is, however, unclear how prevalent digital anxiety actually is in the finance function, what the behavioral consequences are, and how to reduce it.

To address these questions, we take a self-regulation perspective and start by focusing on the emergence and consequences of digital anxiety. From a self-regulation perspective, anxiety arises when people experience a conflictual discrepancy between a new reference point (e.g., goals, standards, and intentions) and existing ones (Carver and Scheier 1988). The need to move forward with the digital transformation can create a new reference point for employees that could likely contradict other existing reference points (e.g., personal comfort or acceptance by others). When employees experience this discrepancy as conflictual, digital anxiety as a negative affective state of apprehension, arousal, or even fear can arise. The actual behavioral response to anxiety (e.g., disengage or increase engagement) depends on the person's expected outcome of the behavioral adaptation (Carver and Scheier 1988). We argue that digitally anxious employees anticipate rather negative outcomes of this transformation process. These employees may, for instance, anticipate that investing extra effort in identifying use cases for digital technology applications could carry the risk of task substitution or even lead to a reduced status in the organization, rather than improving their personal job situation. We thus predict that digital anxiety, on average, creates an impulse to disengage.

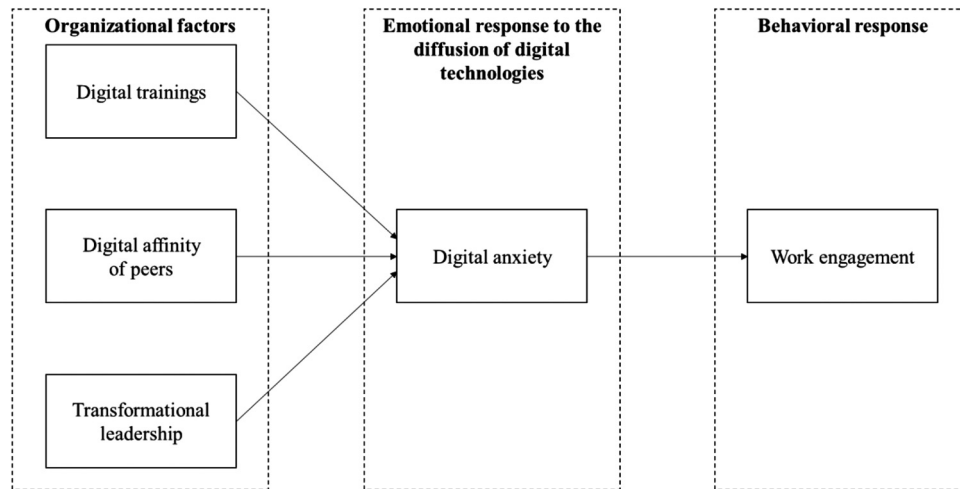
To understand how firms can cope with digital anxiety, we examine organizational factors that could mitigate digital anxiety. From a self-regulatory perspective (Bandura 1988; Carver and Scheier 1988), these factors need to influence employees in such a way that they experience the discrepancy between the demands of the digital transformation and their personal situation as less conflictual. According to Wood and Bandura (1989), three mechanisms can be particularly relevant in this regard: the development of people's competencies, the cultivation of people's belief that they can cope with a situation, and the enhancement of people's motivation toward specific behaviors. We hence link these mechanisms to three organizational factors—previous training in digital technologies, the digital affinity of peers, and transformational leadership—and predict that these factors will mitigate digital anxiety. Figure 1 provides an overview of our research framework.

To empirically investigate our predictions, we gather extensive survey data among 1,038 employees working in the finance function of a large multinational business group headquartered in Europe. The survey is based on anonymous responses, helping us to ensure an open and confidential response behavior, which is especially relevant for mitigating social desirability issues when self-reporting on anxiety (P. Podsakoff, MacKenzie, and N. Podsakoff 2012). We further enrich the quantitative survey data with several qualitative insights from more than 200 anonymous open-text comments and five in-depth *post hoc* interviews with employees in the finance function.

Our results indicate that digital anxiety is highly relevant to 40 percent of the survey respondents. Moreover, we find a significant negative association between digital anxiety and the work engagement of employees. We further observe significant negative associations between digital trainings, the digital affinity of peers, as well as transformational leadership and digital anxiety. These results indicate that firms can build on organizational factors to mitigate digital anxiety. The qualitative insights substantiate these relationships but also point to the relevance of considering a more nuanced view of our model, which motivated us to conduct three additional tests.

The additional tests, first, show that the consequences of digital anxiety vary depending on the specific organizational demands on employees. Specifically, the negative association between digital anxiety and work engagement is particularly pronounced for employees with classical routine tasks related to the core of the finance function (e.g., data collection and processing), whereas it disappears for employees with strategic responsibilities. Second, we find that the negative associations between the organizational factors and digital anxiety remain robust for employees with low digital affinity. Third, the results indicate that the negative relationship between digital anxiety and work engagement is also associated with fewer realized benefits from digital technologies.

FIGURE 1
Research Framework



Our study contributes to research and practice in several ways. First, we provide large-scale empirical evidence that digital anxiety can reduce employees' work engagement and thus may unfold as a barrier to the digital transformation in the finance function. Prior accounting research has primarily focused either on the use cases of digital technologies (e.g., Appelbaum, Kogan, Vasarhelyi, and Yan 2017; Fehrenbacher, Ghio, and Weisner 2022) or on the technical prerequisites for the digital transformation in the finance function (e.g., Bergmann et al. 2020; Knauer et al. 2020). Although exploring these aspects is important to understand how digital transformation impacts the finance function in the future, emotions at the employee level have largely been neglected in this context (Repenning et al. 2022). This is critical, as prior research has emphasized the importance of engaged employees to shape the digital transformation from the bottom up (e.g., Elbashir, Collier, and Sutton 2011). Thus, we contribute to a broader understanding of why the digital transformation of the finance function is partially at a rather early stage (Möller et al. 2020).

Second, we contribute to a better understanding of how organizations can mitigate negative emotional reactions of employees. Although previous accounting literature has outlined the importance of considering organizational factors, such as trainings, as a type of control to influence cultural change in the management accounting department (e.g., Järvenpää 2007) and the identity formation of employees (e.g., Goretzki, Strauss, and Weber 2013), these organizational factors have only rarely been linked to employee emotions. At the same time, emotions have been primarily considered as a consequence of accounting practices (Boedker and Chua 2013; Guénin-Paracini, Malsch, and Paillé 2014). We thus complement this literature by drawing on a self-regulation perspective and linking organizational factors to the emotional reactions of employees in the context of digital transformation. As such, our study contributes to a better understanding of how organizations can handle employee emotions and successfully operate in transformational contexts.

Finally, our study contributes more broadly to the prevailing view of anxiety in the accounting literature. Although previous studies have focused on task characteristics and accounting practices as triggers of anxiety (Guénin-Paracini et al. 2014; Sawers 2005), it remains an open question how digital technologies emotionalize the finance function (Repenning et al. 2022). We outline the diffusion of digital technologies in the finance function as a potential trigger of anxiety and provide insights into the contextual factors (e.g., the organizational responsibility) that render digital anxiety particularly important. Given the information-intense context of the finance function and the ongoing integration of digital technologies into accounting practices, the impact on employee emotions may even increase in the future. Our study thus underscores the increasing importance of combining both social and technical perspectives in accounting research (Knudsen 2020).

II. CONCEPTUAL BACKGROUND

The Role of the Finance Function

The finance function is broadly responsible for financial management, business planning, and accounting. Within this responsibility, the literature typically relates the various tasks of the finance function to two major roles: the

watchdog role and the business partner role. The watchdog role is based on the stewardship concept, with the finance function acting as a watchdog of corporate funds (Maas and Matějka 2009). This role includes tasks in the fields of reporting, compliance, and control, such as statutory reporting, budget management, accounting, and financial planning, as well as the identification and avoidance of internal control weaknesses and risks (Chang, Ittner, and Paz 2014; Burns and Baldvinsdottir 2005). Although many activities related to these tasks, such as the collection and processing of financial information, have a rather transactional, routine character, the watchdog role also comprises several knowledge-based activities, such as designing an internal control environment (Hoe 2009; Burns and Baldvinsdottir 2005). The business partner role typically stretches considerably beyond routine activities. This role, for example, relates to providing decision support to executives via proactive and situational analyses. It also comprises contributing to strategy development and implementation by, for example, translating a strategy into actionable targets (Mahlendorf 2014; Chang et al. 2014).

The Digital Transformation of the Finance Function

More recently, the diffusion of digital technologies has started to affect all kinds of organizational activities (see Bharadwaj, El Sawy, Pavlou, and Venkatraman 2013), including those of the finance function (Möller et al. 2020). Practitioners and academics anticipate a striking influence on the finance function, as digital technologies may replace or change existing tasks and also create new ones. For example, automation technologies, such as tools for robotic process automation (RPA), enable the automation of several routine tasks (Mahlendorf and Weißenberger 2021). Advances in approaches related to data analytics and visualization, on the other hand, provide new opportunities for information collection and analysis (Moll and Yigitbasioglu 2019). Data analytics tools, for example, could help to provide more detailed insights into the value drivers of business units (Zoni and Pippo 2017) that are valuable for several organizational actors (Möller et al. 2020). An increase in the use of digital technologies, however, will also require the finance function to create standards on the use of digital technologies and data storage and collection, as well as to evaluate whether applications comply with existing control standards.

The influence of digital technologies increasingly affects the two roles of the finance function. Based on the application of digital technologies, firms have gradually begun to automate parts of the routine tasks performed by the finance function. This likely reduces the emphasis on several tasks currently related to the watchdog role and will thus shift this role toward the evolving knowledge-based activities in data and technology management, as well as internal control.¹ Released resources from routine tasks, on the other hand, may also emphasize the business partner role of the finance function in general and thus require employees to place more emphasis on business partner-oriented tasks. These tasks, however, will increasingly require employees to integrate digital technologies into their activities. In particular, advice seekers (e.g., the CEO) may demand that the finance function exploits and explores digital technologies to enrich its advice with more data-driven insights. In sum, the integration of digital technologies will likely trigger significant change processes in the finance function, which we define as the digital transformation of the finance function.²

Although academics and practitioners highlight the necessity of finance functions making progress with their transformations, the digital transformation of the finance function is often at an early stage, and its progress has not met initial expectations (Hippe et al. 2022; Möller et al. 2020). This lack of progress calls for more empirical insights into the barriers and drivers of the digital transformation of the finance function, but there is still a dearth of studies in the literature. Exceptions, such as Bergmann et al. (2020), highlight how technical prerequisites, such as the existing data infrastructure, can hinder the use of digital technologies. Although this is clearly a major obstacle, the technical focus somewhat neglects the role of the key stakeholder group in this transformation—the employees of the finance function. The employees of the finance function are particularly affected by the uncertain prospects of digital transformation and thus face high uncertainty regarding their future work conditions and job demands. At the same time, the employees are essential to leverage digital technology from the bottom up (e.g., Elbashir et al. 2011). Hence, engaged employees are likely a crucial factor for the digital transformation of the finance function, and it is important to better understand their behavior in this context.

¹ Another relevant development is the increasing centralization in organizations with a greater use of artificial intelligence and data analytics (Labro, Lang, and Omartian 2023). This further triggers changes as some tasks may shift from an operative level (e.g., business unit) to a central unit, which is, in turn, accompanied by an increasing need for central data governance.

² In this definition, we build on existing research on digital transformation (Vial 2019; Hanelt, Bohnsack, Marz, and Antunes 2021). For instance, Hanelt et al. (2021, 1160) define digital transformation as “organizational change that is triggered and shaped by the widespread diffusion of digital technologies.”

Digital Anxiety as a Response to the Digital Transformation of the Finance Function

Recent accounting literature points to the importance of emotions to understand employee behavior and their emergence when it comes to the digital transformation of the finance function (Repenning et al. 2022). Emotions are reactions to a certain trigger event (Loh, Cheng, and Coyte 2023; Repenning et al. 2022) and, thus, can likely emerge as a response to the digital transformation. The literature further suggests that especially fear-based emotions could arise in situations of high unpredictability (Oakes and Oakes 2015), which arguably applies to the digital transformation of the finance function. Fear-based emotions, such as anxiety, are however often linked to resistance and prevention behaviors (e.g., Barclay and Kiefer 2019; Bala and Venkatesh 2016), which might be problematic for the progress of digital transformation. We therefore focus on digital anxiety as a fear-based emotion triggered by the digital transformation.

We define digital anxiety as the perceived apprehension, increased arousal, or even fear that employees feel when considering the diffusion of digital technologies.³ To better understand digital anxiety, we follow the anxiety model of Carver and Scheier (1988), which is based on a self-regulation perspective. From this perspective, employees continually regulate their behavior by self-attentively monitoring their actions with regard to specific reference points, such as goals, standards, and intentions (Bandura 1991; Carver and Scheier 1988). These reference points might reflect personal values but can also be influenced by environmental changes (Carver and Scheier 1988). In this view, the continuous pressure to move forward with the digital transformation can create a new reference point for employees. For instance, employees likely anticipate that they are required to bring forward the digital transformation by, for example, adapting work procedures and acquiring new digital skills (Möller et al. 2020). Based on these reference points, employees reflect upon their current situation and the aspired situation and undertake actions to create a greater conformity between these two (Carver and Scheier 1990). If, however, employees find themselves in a situation where adjusting the behavior toward one reference point creates a conflict with another reference point, anxiety can arise (Carver and Scheier 1988).

The extensive narratives regarding new job demands and changing work conditions in the finance function (Hippe et al. 2022; Frey and Osborne 2017) create plenty of room for situations where employees can see existing reference points as threatened by the digital transformation. For instance, employees may worry whether they are able to learn how to operate in a digitalized work context, since corresponding job demands often require specialized knowledge domains, such as data science, mathematics, and statistics, that considerably go beyond the expertise of typical finance employees (Roozens, Steens, and Spoor 2019). Employees could perceive a threat for their individual job role and status in the organization, as the application of digital technologies could require them to focus on other knowledge-intensive tasks and relinquish individual control over existing work procedures (e.g., manual data processing) that have been their daily business for a long time. Further narratives consistently stress that the finance function could also face a reduction in size (Möller et al. 2020). The digital transformation of the finance function therefore likely triggers anxious reactions of employees through the creation of a new reference point (e.g., adapting work procedures or acquiring digital skills) that contradicts in employees' self-regulatory processes with another reference point (e.g., personal comfort or acceptance by others).

III. HYPOTHESES DEVELOPMENT

Digital Anxiety and Work Engagement

Prior literature emphasizes that employees are required to intensively engage to move forward with the digital transformation (van der Merwe and White 2021) and that the required effort typically reaches far beyond the ordinary day-to-day effort of work (Vial 2019). As such, the progress of digital transformation in the finance function may crucially depend on the work engagement of employees, which captures the extent to which employees are motivated to self-invest personal resources in work (Christian, Garza, and Slaughter 2011). However, the level of engagement likely varies among employees and can crucially be affected by anxiety.

From a self-regulatory perspective, anxiety serves as a warning signal, indicating that the person should consider a change in behavioral priorities (Carver and Scheier 1988; Simon 1967). This warning signal creates a state of mental alertness, which often relates to an impulse to disengage (Carver and Scheier 1988). Disengagement can help anxious people protect themselves from engaging in behaviors that further invoke anxious feelings (Compeau and Higgins 1995;

³ This conceptualization is similar to the computer anxiety concept in that both focus on technology-related triggers (Venkatesh 2000). Besides the differences in the underlying technology (i.e., digital technology versus computers), we distinguish digital anxiety from computer anxiety in that digital anxiety also captures the worries and feelings caused when considering the diffusion of digital technologies, whereas computer anxiety captures only the anxiety related to the actual use of computers (Venkatesh 2000). As such, we intend to capture worries that arise due to changes in future job roles and not only due to the direct use of digital technologies.

Coutu 2002). In line with this, several studies document a strong link between anxiety and resistance, as well as prevention behaviors (Lapointe and Rivard 2005; Barclay and Kiefer 2019; Bala and Venkatesh 2016; Beaudry and Pinsonneault 2005).

Nevertheless, some studies indicate that the mental alertness triggered by anxiety can also unfold in renewed effort instead of disengagement when employees expect a positive outcome from this behavioral change (Guénin-Paracini et al. 2014). However, applying this logic to our context of digital anxiety might be difficult. First, it might be difficult for employees to allocate time to extra endeavors, such as identifying potential for digital technology applications (Chanias, Myers, and Hess 2019) and proactive experimenting with new tools (Möller et al. 2020). Especially the daily responsibilities of employees in the finance function, which often require full-time attention by employees, make it particularly challenging for them to additionally engage in activities that reach beyond their daily responsibilities. Second, they face high uncertainty whether such an increased effort will actually yield positive outcomes for their personal situation. For instance, if they proactively standardize their own tasks for automation endeavors, it might still be (or even become more) uncertain how this will affect their future job role. If employees, further, experiment with new digital tools, this could increase the risk of mistakes and related criticism that may even have negative implications for their job role and status in the organization. Employees that experience digital anxiety may thus reduce their investment of personal resources in work to protect themselves from expected unfavorable outcomes. Against this background, we predict that digital anxiety is negatively associated with the work engagement of employees:

H1: Digital anxiety is negatively associated with work engagement.

Organizational Factors Mitigating Digital Anxiety

The potential disengagement of employees experiencing digital anxiety makes it particularly important to understand which factors help mitigate digital anxiety. The self-regulatory processes of employees provide a good starting point, as the literature indicates that these self-regulatory processes can be shaped by the specific organizational context (Wood and Bandura 1989). We build on Bandura's (1988) theoretical framework of how self-regulatory processes interact with the organizational context. According to Bandura (1988), three mechanisms can be particularly relevant in influencing an individual's self-regulatory processes: the development of people's competencies, the cultivation of people's belief that they can cope with a situation, and the enhancement of people's motivation toward specific behaviors. Given that digital anxiety results from a conflictual experience in these self-regulatory processes, we believe that these three mechanisms could be relevant for digital anxiety. In the following, we link digital anxiety to three organizational factors that could help mitigate digital anxiety through these mechanisms.

Digital Trainings and Digital Anxiety

The first mechanism relates to the development of people's cognitive, social, and behavioral competencies (Bandura 1988; Wood and Bandura 1989). The development of competencies helps to increase familiarity with a specific domain and enhances the understanding of its determinants and effects (Bandura 1988; Wood and Bandura 1989). Qualitative accounting studies also show that the development of competencies is particularly relevant in terms of influencing mental frameworks in the context of organizational change (Järvenpää 2007; Goretzki et al. 2013). We therefore argue that training related to digital technologies might help employees become familiar with the competencies needed in the digital future, such as an understanding of the underlying technologies, analytical thinking, and increased business acumen (Möller et al. 2020). Increased familiarity with these competencies can help employees to build more realistic and founded expectations about how to acquire and master these competencies, and, in turn, these employees should experience the prospect of digital transformation as less conflictual with their current situation. Employees who have taken part in digital trainings should thus be less prone to digital anxiety:

H2a: Digital trainings are negatively associated with digital anxiety.

Digital Affinity of Peers and Digital Anxiety

The second mechanism relates to the belief that people have of being able to cope with a situation (Bandura 1988; Wood and Bandura 1989). The belief of being able to handle a situation can be crucial when it comes to the self-regulatory evaluation of and emotional reaction to a situation. However, this belief can be influenced by the surrounding organizational context (Bandura 1988; Wood and Bandura 1989). Specifically, peer employees can provide individual support to others and might thereby take on a crucial role in how other employees perceive the demands for change

(Burns and Baldvinsdottir 2005; Goretzki et al. 2013; Smollan 2017). Peer employees might create a setting of psychological safety by providing guidance and operational support for other employees.⁴ We build on this idea and argue that peer employees who are digitally savvy could strengthen the confidence of those other employees to cope with the digital transformation. Specifically, those employees who work in the presence of digitally savvy peers might be more likely being supported in coping with the digital transformation, and, hence, this will reduce the probability of these employees sensing the discrepancy between the digital transformation and the current situation as conflictual. Digital affinity of peers could thus mitigate digital anxiety:

H2b: Digital affinity of peers is negatively associated with digital anxiety.

Transformational Leadership and Digital Anxiety

The third mechanism relates to the motivation of employees to achieve specific goals (Bandura 1988; Wood and Bandura 1989). Employees who are motivated to achieve a specific goal are more likely to keep track of the required behavior and, therefore, are less prone to emotional reactions that deviate from this goal (Bandura 1988). Prior literature indicates that leadership activities, such as storytelling, intense communication, and role modeling, are crucial to create such motivation and foster organizational change (Järvenpää 2007; Goretzki et al. 2013). Thus, we focus on transformational leadership, as these leaders typically articulate a compelling vision, inspire others, and foster intellectual development (Podsakoff, MacKenzie, and Moorman 1990; Resick, Whitman, Weingarden, and Hiller 2009). We argue that transformational leaders could motivate employees to orient themselves toward a specific and desirable vision of the digital transformation by, for example, underscoring the significant strategic value of a finance function exploiting digital potential for the company. Consequently, employees who are motivated regarding the digital transformation are less likely to sense potential conflicts with other reference points, such as personal comfort. In turn, employees with transformational leaders may instead be inspired to move forward with the digital transformation rather than being prone to digital anxiety:

H2c: Transformational leadership is negatively associated with digital anxiety.

IV. RESEARCH SETTING AND METHODOLOGY

The Research Site: ManufactCo

We focus on the finance function of ManufactCo, one of the largest multinational business groups headquartered in Europe. ManufactCo develops, produces, and sells consumer durables across the world. The revenue exceeds more than 75 billion EUR, whereas the firm has more than 100,000 employees. Production sites are mostly in Europe but also in North America, South America, and Asia. The group oversees research and development, production planning, and other administrative functions. This centralization also relates to the finance function, which is organized as a central unit at the group level and decentralized units in the businesses that report to the central unit at the group level. The entire finance function comprises about 2,400 employees.

Digital transformation is of high priority and is considered a key factor for the future success of ManufactCo. Two years before our survey, the firm announced a new strategy, making digital transformation a cornerstone. In response to this strategy, the finance function developed a so-called digital finance roadmap that was disseminated in the organization about one year before the start of the survey. The roadmap itself did not specify a concrete plan and instead focused on five major targets related to the digital transformation: (1) increase data quality and availability through better data governance, (2) increase process efficiency through process automation, (3) increase decision-making quality by delivering better insights, (4) support new business models through a stronger business orientation, and (5) consider the employees. Although the finance function of ManufactCo typically has a strong top-down approach when implementing new systems or ideas, it also looks for decentralized support from its employees in identifying appropriate use cases. The digital technologies in focus are automation technologies, such as RPAs, and tools for data analytics and visualization, but the use is rather at an early stage.⁵

⁴ Our arguments assume that there is at least some collaboration (and peer support) among employees, but we acknowledge that the degree of collaboration might vary among different contexts. For instance, a hypercompetitive or even hostile work context might lower the degree of peer support, although task dependencies should still require some kind of support and collaboration among employees.

⁵ A table with quotes from the open survey comments as well as *post hoc* interviews describing the use of digital technologies is available upon request.

The setting is promising for studying the emotional reactions of employees, as they work to harness the potential of digital technologies while facing uncertainty and the need to adapt their competencies to meet future job demands. The focus on one company also comes with several benefits when studying employee emotions. First, the setting allowed us to eliminate potential concerns regarding firm-specific heterogeneity that may confound the effects related to digital anxiety (e.g., differences regarding the status of the digital transformation or its strategy). Second, access to a large finance function and support from group CFOs increased the likelihood of generating a rich dataset. Third, the cooperation with ManufactCo enabled us to pair survey responses with pre- and post-survey interviews, enriching our quantitative data with qualitative insights.

Procedure and Data

Quantitative Survey Data

We distributed an online survey as our primary data-collection method. Online surveys are most widely used to measure nonobservable psychological constructs, such as anxiety (e.g., Venkatesh 2000; Jensen, Patel, and Messersmith 2013). To ensure that all of our constructs of interest were well understood, we conducted several pretests and reformulated several items to better match our context. The survey was conducted during the period of September–October 2019. The group CFO informed the finance function employees about the survey and invited them to participate. The data were recorded anonymously, which we assured to the participants in the survey invitation.⁶

To mitigate potential common method biases, we used several procedural remedies (e.g., cover story, examples, well-developed scales, separated sections) as an *ex ante* measure (Podsakoff et al. 2012). As a *post hoc* indicator, we tested for Harman's single factor by conducting an exploratory factor analysis. No single factor emerged from the analysis, and no factor accounted for most of the variance. We also used a theoretically unrelated marker variable (average time spent per survey section by the respondent) as a surrogate for common method variance and tested whether our results remained the same with and without the marker variable. Our results held, and the marker variable indicated only insignificant relationships.

Finally, 1,038 employees from the finance function took part in the survey, representing a relatively high participation rate of 44 percent. Due to data protection regulations, we could only combine our data with archival data on the specific job functions of the participants and their biological sex. Data on the age of the participants, for example, needed to be queried in categories via the survey.⁷ Table 1 summarizes the characteristics of the participants. Accordingly, the majority of the participants (64 percent) were between 30 and 49 years old, and 41 percent of the participants were female. Moreover, 62 percent of the participants worked in controlling, whereas about 23 percent worked in accounting.

Despite our relatively high response rate, nonresponses might bias our analysis. Since late respondents might have characteristics similar to those of nonrespondents, we compared early and late respondents as an indicator for a nonresponse bias (Armstrong and Overton 1977). T-statistics of all latent key variables revealed no significant differences. We also compared the functional representation of employees between the respondents and nonrespondents. Again, t-statistics revealed no significant differences, which indicates that nonresponses might not be an issue for our analysis. The results of these tests are available upon request.

Qualitative Insights

We further combined the quantitative survey data with two types of qualitative data. First, survey participants had the opportunity to share their opinion on topics related to the digital transformation in open-text comments. Similar to the standardized responses, these comments were strictly anonymous. In total, we received open comments from 205 employees. The comments had, on average, 64 words, whereas the maximum word count ranged up to 463 words. The comments can be characterized by a high degree of openness, as some elaborated on very personal aspects or included harsh critiques regarding the employer. Second, we had several formal and informal conversations with employees from the case company before the start of the survey, as well as five in-depth interviews after the survey. The conversations before the survey helped us develop a deep understanding of the situation at the research site and design the survey. The in-depth interviews were mostly conducted in fall 2022 and lasted between 55 and 72 minutes. We asked the interviewees to elaborate on the state and progress of the digital transformation at the case company, as well as on the emergence

⁶ The survey was also hosted on a tool and a server from the authors' university, which was communicated to participants when they opened the survey and which was visible in the link and survey layout. The company's worker council was also involved in approving the survey procedure, which we again disclosed to the participants.

⁷ The data were recorded anonymously, so that the identity of the participants could not readily be ascertained. This procedure was verified and approved by the institution that carried out the survey. This research therefore qualifies for exemption from IRB certification in accordance with the 2018 Common Rule, Section 104(d), paragraph 2(i).

TABLE 1
Sample Characteristics

<u>Characteristics</u>	<u>Obs.</u>	<u>Percentage of Total Respondents</u>
Organization		
Headquarters	238	23
Non-headquarters	800	77
Function		
Accounting	237	23
Controlling	639	62
Tax and Customs	44	4
Treasury	80	8
Other	38	4
Location		
Foreign	321	31
Nonforeign	717	69
Age Categories		
Age < 30	110	11
Age 30–39	337	32
Age 40–49	332	32
Age > 50	259	25
Sex		
Female	424	41
Male	614	59

This table presents the sample characteristics for the total sample (n = 1,038). Percentage indicates the proportion of participants belonging to the specific group. Percentages may not add up to 100 percent due to rounding.

and consequences of digital anxiety. All *post hoc* interviews were recorded and transcribed. An overview and timeline of all the meetings is available upon request.

Variables

Dependent and Independent Variable: Digital Anxiety

We developed a new construct to measure *digital anxiety*, as there is no existing construct that captures the anxiety specifically triggered by the digital transformation. We followed a deductive approach, similar to the computer anxiety literature (e.g., [Simonson, Maurer, Montag-Torardi, and Whitaker 1987](#); [Venkatesh 2000](#)), in that we considered the diffusion of digital technologies to be the specific trigger of digital anxiety. Moreover, digital anxiety might be reflected in increased arousal (e.g., uncomfortable feelings) and perceived apprehension (e.g., worries regarding one's future job role). Based on this conceptualization, we developed five items that could reflect digital anxiety: "I get an uncomfortable feeling when I think of using digital technologies," "I am concerned that I am not fully qualified to handle digital technologies," "I am worried about data protection issues when using digital technologies," "Due to digital technologies, I am worried that my personal competencies will be less needed," and "Due to digital technologies, I am worried that my actual job will be less relevant." Because the items represent highly correlated manifestations of digital anxiety, and changes in the construct are likely to cause changes in the items ([Bedford and Speklé 2018](#)), we operationalized *digital anxiety* as a reflective construct. We asked the participants to indicate to what extent they agreed or disagreed with these statements on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

We assessed the content validity of our measure by pretesting it with three employees working in the finance function of our target firm and two academic experts. Furthermore, our statistical assessment of the digital anxiety measure largely supported the reflective conceptualization (see [Table 2](#)). However, the factor loading of the item regarding data protection issues was below 0.5. We theorize that our data protection item might be triggered by aspects other than the diffusion of digital technologies. For example, data protection worries might also reflect

TABLE 2
Variables, Items, and Factor Loadings

Variable and Items	Factor Loading
Main Variables	
Work engagement (CR = 0.935; AVE = 0.616)	
At my work, I feel bursting with energy.	0.82
At my job, I feel strong and vigorous.	0.84
I am enthusiastic about my job.	0.87
My job inspires me.	0.85
When I get up in the morning, I feel like going to work.	0.81
I feel happy when I am working intensely.	0.66
I am proud of the work that I do.	0.81
I am immersed in my work.	0.71
I get carried away when I am working.	0.65
Digital anxiety (CR = 0.861; AVE = 0.610)	
I get an uncomfortable feeling when I think of using digital technologies.	0.72
I am concerned that I am not fully qualified to handle digital technologies.	0.71
I am worried about data protection issues when using digital technologies. ^a	0.49
Due to digital technologies, I am worried that my personal competencies will be less needed.	0.85
Due to digital technologies, I am worried that my actual job will be less relevant.	0.84
Digital trainings	
Dummy variable equaling 1 if the employee has participated in a digital training in the last three years.	NA
Digital affinity of peers	
Measured as the percentage of peer employees with high digital affinity in the department.	NA
Transformational leadership (CR = 0.960; AVE = 0.776)	
My superior communicates a clear and positive vision of the future.	0.85
My superior treats staff as individuals, supports and encourages their development.	0.89
My superior gives encouragement and recognition to staff.	0.90
My superior fosters trust, involvement, and cooperation among team members.	0.91
My superior is clear about his/her values and practices what he/she preaches.	0.86
My superior instills pride and respect in others and inspires me by being highly competent.	0.86
My superior encourages thinking about problems in new ways and questions assumptions.	0.89
Control Variables	
Job autonomy (CR = 0.936; AVE = 0.829)	
I have significant autonomy in determining how I do my job.	0.89
I can decide on my own how to go about doing my work.	0.93
I have considerable opportunity for independence and freedom in how I do my job.	0.91
Influence on digital decisions (CR = 0.941; AVE = 0.888)	
Influence in the prioritization of digital technologies	0.94
Influence in the implementation of digital technologies	0.94
Digital affinity (CR = 0.938; AVE = 0.883)	
I frequently inform myself about trends and developments related to digital technologies.	0.94
I regularly look for opportunities to develop knowledge and skills in the field of digital technologies.	0.94
Digital project involvement	
Dummy variable equaling 1 if the employee is actively involved in digital business projects (as indicated in the survey) and 0 otherwise.	NA
Strategic responsibility	
Dummy variable equaling 1 if the employee primary has strategic organizational responsibilities and 0 otherwise. To define employees as having strategic responsibilities, we	NA

(continued on next page)

TABLE 2 (continued)

Variable and Items	Factor Loading
used the organizational code of each employee and identified those organizational positions that relate to departments involved with the steering of the finance function. For instance, we consider the central departments around the heads of a functional area, such as the CFO office, the office of the head of controlling, or the office of the head of accounting, etc. These offices typically comprise the head as well as several assisting employees. We further consider employees in units that are related to special strategic projects. We define these employees as having primary strategic responsibilities related to the steering of the finance function. Employees in other units are typically mostly responsible for classical tasks in the core fields of the finance function, such as processing and consolidation of financial information and, therefore, are not considered as having primary strategic responsibilities. To validate our definition, we cross-checked it with employees working in the case company and found that it represents a good proxy for our intended measure.	
Accounting and tax Dummy variable equaling 1 if the employee works in the accounting or tax and customs function and 0 otherwise.	NA
Headquarters Dummy variable equaling 1 if the employee works in the headquarters and 0 otherwise.	NA
Foreign Dummy variable equaling 1 if the employee is located abroad and 0 otherwise.	NA
Variables for Additional Tests	
Realized digital benefits (CR = 0.978; AVE = 0.882)	
The daily use of digital technologies in my work leads to...	
...more efficient working procedures.	0.94
...an easier coordination of work across processes, units, and levels.	0.94
...the recognition of changes that are relevant for our business much earlier.	0.94
...a deeper understanding of influences on and interdependencies of our business.	0.93
...a more effective contribution to the business development of our company.	0.95
...a focus on value-creating activities.	0.94

This table reports the operationalization of our variables, as well as the factor loadings, composite reliability (CR), and average variance extracted (AVE) for the latent variables of our empirical models. The factor loadings are based on principal component analysis for each theoretical construct.

^a Excluded from aggregated calculations due to low level of factor loading. Besides the presented variables, we also include dummy variables for age categories and the respective business unit of the employees.

transparency and privacy concerns, which are not only invoked by the diffusion of digital technologies but might also be the result of other characteristics, such as the cultural context. Therefore, we decided to exclude this item from our final digital anxiety measure.

Dependent Variable: Work Engagement

The *work engagement* construct is understood as a motivational concept (Christian et al. 2011) that is characterized by vigor (e.g., the willingness to invest effort in one’s work), dedication (e.g., the experience of a sense of significance), and absorption (e.g., to fully concentrate on and be deeply engrossed in one’s work) (Schaufeli, Bakker, and Salanova 2006; Seppälä et al. 2009). To measure this construct, we used the shortened version of the Utrecht Work Engagement Scale (Seppälä et al. 2009; Schaufeli et al. 2006).

Independent Variable: Digital Trainings

We measure *digital trainings* by asking the employees about the number of training events they had been involved with related to digital technology. In the case company, training offerings are, to a large extent, driven by the program offered by the business unit as well as packages developed by superiors. Moreover, employees need to get permission from their superiors to participate in trainings (see also Table 6). We believe that this setting mitigates self-selection concerns to some extent. The digital trainings offered relate to specific tools, such as Power BI or the SAP analytics cloud, or more generally to the finance function in the digital age. We further restricted the period of interest to the previous

three years. On the one hand, we strove to improve the quality of the employee's estimation. On the other hand, we needed to ensure that the training content was relevant for the development of digital capabilities to be an appropriate measure for our hypothesis. The variable used within our regressions is a dummy variable that equals 1 if employees have taken part in at least one digital training in the previous three years and 0 otherwise.

Independent Variable: Digital Affinity of Peers

We measure the *digital affinity of peers* as the percentage of peer employees with high digital affinity in the department. To classify peer employees in terms of their digital affinity, we used their rating for our digital affinity measure, which captures the extent to which employees have a positive attitude toward and interest in digital technologies. We defined the employees in the highest quartile as those with high digital affinity. *Digital affinity of peers* was then calculated as the percentage of digitally savvy peer employees in the department. *Digital affinity of peers*, thus, ranges from 0 to 1, and a higher value indicates higher digital affinity of peer employees.

Independent Variable: Transformational Leadership

The *transformational leadership* construct measures the superior's leadership behavior. Specifically, a transformational leadership style was linked to the following behaviors: (1) communicates a vision, (2) develops staff, (3) provides support, (4) empowers staff, (5) is innovative, (6) leads by example, and (7) is charismatic (Podsakoff et al. 1990; Carless, Wearing, and Mann 2000). To measure these behaviors, Carless et al. (2000) developed a short measure of transformational leadership, the so-called Global Transformational Leadership (GTL) Scale. Within their work, they compared the measurement properties with alternative measures of transformational leadership (e.g., the Multifactor Leadership Questionnaire) and obtained reliable results. Therefore, we follow Carless et al. (2000) by using the GTL Scale.

Control Variables

We aimed to exclude potential confounding influences by considering several control variables in our models. First, personal characteristics, such as the skills and attitudes of employees regarding the digital transformation, might influence whether employees are prone to digital anxiety and probably also their engagement. We hence considered the employee's *digital affinity* and dummy variables for *age categories*, as age might also relate to technological savviness (Vodanovich, Sundaram, and Myers 2010). We further considered a dummy variable for *female* employees. Second, structural characteristics might determine the participant's involvement in the digital transformation, which could also create confounding influences for the emergence and consequences of digital anxiety. Therefore, we considered a dummy variable equaling 1 if the employee was actively involved in a digital business project and 0 otherwise (*digital project involvement*) and a dummy variable equaling 1 if the employee has organizational responsibilities related to the steering of the finance function and 0 otherwise (*strategic responsibility*). We further considered the individual's *influence on digital decisions* (e.g., regarding their implementation and prioritization) and the construct of *job autonomy*, which captures the extent to which employees can determine the way in which they do their work (e.g., Mahlendorf, Kleinschmit, and Perego 2014). We additionally included dummy variables for the job function (i.e., *accounting and tax*), *headquarters*, and *foreign location*, as all of these structural aspects influence the context in which the self-regulatory processes of employees take place. Table 2 describes the questions and factor loadings for the survey constructs.

Assessment of the Measurement Model

All of our latent constructs were operationalized as reflective measures. To assess the construct reliability and convergent validity of these reflective measures, Table 2 provides the factor loadings, composite reliability (CR), and the average variance extracted (AVE). The factor loadings were based on principal component analysis for each theoretical construct. In all cases, both the CR and AVE were satisfied because the constructs have CR values higher than 0.7 as well as AVE values higher than 0.5 (Fornell and Larcker 1981). To assess the discriminant validity, the Fornell and Larcker criteria were tested by comparing the square root of the AVE with the correlations across the constructs. Discriminant validity was confirmed for all constructs (see Table 4). Altogether, the evidence suggests that the measurement model displays good measurement properties.

V. RESULTS

Descriptive Results

The Prevalence of Digital Anxiety

Table 3, Panel A gives an impression of the prevalence of digital anxiety in our sample, with 40 percent of the respondents agreeing to some degree with one of the four items for digital anxiety. Most of these respondents (reflecting 25 percent of the total respondents) indicated that they had qualification concerns regarding the handling of digital technologies. Concerns about job relevance and personal competence were similarly present, whereas uncomfortable feelings related to digital technologies were less frequent. Given that it is likely to be undesirable for people to admit anxious feelings in the work context, we believe that our results indicate that digital anxiety is relatively prevalent in our context. We also compared the prevalence of digital anxiety in our setting with prior studies on computer anxiety to get a better sense of the prevalence of digital anxiety. We created an anxiety score similar to Bozionelos (1996), who found that computer anxiety was prevalent for 21.3 percent of the professionals in their sample. Comparing this with our sample, we observed a remarkably higher prevalence of digital anxiety (35.9 percent).⁸ We also compared our results with other computer anxiety studies (Edler, Gardner, and Ruth 1987; Gardner, Render, Ruth, and Ross 1985) and similarly found that digital anxiety in our sample seems to be relatively more prevalent.

Table 3, Panel B also provides qualitative insights into the anxieties of the employees. Several respondents and interviewees highlighted the relevance of digital anxieties and the need to address them. For example, one respondent stated that “employees should also be met on the human level... It is important to note that this [technological change] also creates anxieties, resistance, and blockades against innovations/changes on an unconscious level among employees” (survey comment). Employees also explicitly shared their worries about their qualifications or competence related to digital technologies. Others raised concerns regarding the potential loss of their positions or tacit knowledge, and we also received multiple comments that showed broader uncomfortable feelings related to regarding digital technologies as a “black box.” Overall, these insights support and also provide some nuances on the diffusion of our digital anxiety construct.

Summary Statistics of All Regression Variables

Table 4 shows the descriptive statistics and correlations of our regression variables. The results indicated that 47 percent of the respondents had taken part in digital training in the previous three years. We further found a significant negative correlation between digital anxiety and work engagement (-0.28), as well as between digital trainings, digital affinity of peers, and transformational leadership and digital anxiety, respectively (-0.17 , -0.07 , and -0.17 , respectively).

Main Results

To test our hypotheses, we estimated a structural equation model (SEM). Applying SEM allowed us to simultaneously test our hypotheses by incorporating more than one dependent variable (i.e., *work engagement* and *digital anxiety*). To estimate the paths, we used the maximum likelihood estimation and employed the *sem* command in Stata 16. To specify our models, we followed a stepwise procedure similar to prior literature (Bellora-Bienengraber, Radtke, and Widener 2022; Kline 2015). We started with a just-identified model⁹ and trimmed the model by keeping only the hypothesized and significant paths to specify Model 1. We added sets of control variables stepwise and followed a similar trimming procedure to derive Model 2 and Model 3. Model 2 adds all the significant control paths of the structural variables, whereas Model 3 further adds significant control paths of the personal characteristics. Table 5 presents the results. In addition to the quantitative results, we exploited our qualitative data to substantiate our findings. Table 6 summarizes the related qualitative insights. Figure 2 further summarizes our quantitative results.¹⁰

⁸ To calculate a comparable score, we summed up the ratings for each anxiety item and created a score that ranged from 4 (equaling 1 along all four anxiety items) to 28 (equaling 7 across all four anxiety items) and defined the score as the percentage of respondents who rated higher than the midpoint of this scale.

⁹ The just-identified model includes our four hypothesized paths and all alternative paths, such as the paths that relate to our exogenous variables (i.e., *digital trainings*, *digital affinity of peers*, and *transformational leadership*) to each other and to the endogenous variables (i.e., *digital anxiety* and *work engagement*).

¹⁰ In robustness tests, we also used partial least squares (PLS-SEM) and OLS as alternative estimation techniques. PLS-SEM allows us to explicitly consider potential measurement errors by simultaneously estimating both the measurement and structural parts of our model. We used the bootstrapping option with 200 cases to evaluate the statistical significance of each path and found similar results to our SEM analysis. For the OLS regressions, we incorporated all control variables and tested consequences and mitigating factors separately. Our results remain robust.

TABLE 3
The Prevalence of Digital Anxiety

Panel A: Diffusion of Digital Anxiety

	<u>Obs.</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Min.</u>	<u>Max.</u>	<u>At Least Somehow Agree (%)</u>
Digital anxiety Items	1,038	2.79	1.24	1.00	6.75	40
Uncomfortable feeling	1,038	2.40	1.40	1.00	7.00	11
Qualification concerns	1,038	3.15	1.68	1.00	7.00	25
Personal competencies less needed	1,038	2.83	1.59	1.00	7.00	18
Actual job less relevant	1,038	2.81	1.62	1.00	7.00	19
Excluded Items						
Data protection worries ^a	1,038	3.79	1.83	1.00	7.00	39

Panel B: Qualitative Insights Regarding Digital Anxiety

<u>Topic</u>	<u>Selected Qualitative Insights</u>
Relevance of digital anxiety in the finance function	<ul style="list-style-type: none"> • “Employees should also be met on the human level... It is important to note that this [technological change] also creates anxieties, resistance, and blockades against innovations/changes on an unconscious level among employees.” [Survey comment] • “The classic accountants have optimized their work procedure for years. They have arranged everything in such a way that they have the time to carefully check everything... Well, I will put it this way, they are not the ones who are the absolute hipsters and run around saying, I am up for trying out new things, but rather keen on security. That is going away at the moment someone comes around the corner and says, I have something really great, really cool, really new. And that is why it is definitely an emotional topic.” [Interview 5]
Specific anxieties—Competency and qualification concerns	<ul style="list-style-type: none"> • “I work in the finance field and am not a system administrator, so I do not immediately understand all innovations or try to work with them myself somehow.” [Survey comment] • “I do not know what tools will be developed in my field in the next year and whether they will affect my current work... How should I get this information easily and clearly?” [Survey comment]
Specific anxieties—Loss of relevance (status or job)	<ul style="list-style-type: none"> • “It is a pity that one is not asked about digitalization even if one has long operational experience.” [Survey comment] • “New technologies are a double-edged sword. They are very necessary and we all need to be involved in their implementation... but without losing our focus. We must not lose the human capital that makes [ManufactCo] what it is today.” [Survey comment] • “Digitization also means the loss of know-how, which must be preserved in order to be able to solve problems.” [Survey comment]
Specific anxieties—Uncomfortable feelings	<ul style="list-style-type: none"> • “Everything is becoming more anonymous. Bots are suddenly in demand, and one is almost compelled to consider what a bot could automate for a lot of money.” [Survey comment] • “The company is somehow not managed properly if the financial information is not processed correctly. So that means there is a great responsibility attached to it... And then to get involved with a new technology that you do not know and to blindly trust it comes not with a good feeling.” [Interview 5]

Panel A reports the mean of the scale rating (possible range from 1, strongly disagree, to 7, strongly agree) and the percentage of respondents who at least somehow agree (rated at least 5 at the scale) ($n = 1,038$). Panel B reports exemplary qualitative insights into digital anxiety from survey comments and *post hoc* interviews. These statements are partly translated from its original language.

See [Table 2](#) for factor loadings.

^a Excluded from aggregated calculations due to low level of factor loading.

TABLE 4
Descriptive Statistics and Correlations of Regression Variables

#	Variables	Mean	Std. Dev.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Work engagement ^a	0.00	1.00	-4.22	1.76	0.78						
2	Digital anxiety ^a	0.00	1.00	-1.42	3.18	-0.28	0.78					
3	Digital trainings ^b	0.47	0.50	0.00	1.00	0.16	-0.17	NA				
4	Digital affinity of peers ^c	0.24	0.14	0.00	1.00	0.00	-0.07	-0.02	NA			
5	Transformational leadership ^a	0.00	1.00	-2.91	1.38	0.41	-0.17	0.14	-0.05	0.88		
6	Job autonomy ^a	0.00	1.00	-3.25	1.68	0.33	-0.22	0.08	0.02	0.22	0.91	
7	Influence on digital decisions ^a	0.00	1.00	-1.06	3.31	0.31	-0.24	0.20	-0.01	0.21	0.25	0.94
8	Digital project involvement ^b	0.37	0.48	0.00	1.00	0.18	-0.24	0.24	0.00	0.12	0.10	0.37
9	Strategic responsibility ^b	0.20	0.40	0.00	1.00	0.04	-0.07	0.07	-0.10	0.03	-0.05	0.06
10	Headquarters ^b	0.23	0.42	0.00	1.00	0.00	-0.07	-0.11	0.13	-0.02	0.00	-0.01
11	Foreign location ^b	0.31	0.46	0.00	1.00	0.14	-0.03	0.28	-0.08	0.18	0.08	0.06
12	Accounting and tax ^b	0.27	0.44	0.00	1.00	-0.01	0.00	0.06	0.19	-0.03	0.02	-0.01
13	Digital affinity ^a	0.00	1.00	-2.72	1.66	0.30	-0.36	0.29	0.02	0.12	0.15	0.34
14	Age 30–39 years ^b	0.32	0.47	0.00	1.00	-0.06	-0.07	-0.02	-0.05	-0.03	-0.03	-0.02
15	Age 40–49 years ^b	0.32	0.47	0.00	1.00	0.06	-0.01	0.02	0.05	0.05	0.04	0.04
16	Age >49 years ^b	0.25	0.43	0.00	1.00	-0.04	0.15	-0.01	0.00	-0.14	-0.02	0.00
17	Female ^b	0.41	0.49	0.00	1.00	-0.11	0.15	-0.07	-0.03	-0.04	-0.14	-0.17

#	Variables	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
8	Digital project involvement ^b	NA									
9	Strategic responsibility ^b	0.08	NA								
10	Headquarters ^b	-0.03	0.28	NA							
11	Foreign location ^b	0.08	0.14	-0.37	NA						
12	Accounting and tax ^b	0.04	-0.22	0.11	0.01	NA					
13	Digital affinity ^a	0.34	0.02	-0.04	0.14	0.03	0.94				
14	Age 30–39 years ^b	0.05	-0.03	0.01	-0.08	-0.02	0.01	NA			
15	Age 40–49 years ^b	-0.01	-0.02	-0.03	0.10	-0.02	0.03	-0.48	NA		
16	Age >49 years ^b	-0.06	0.02	-0.01	-0.04	0.03	-0.06	-0.40	-0.40	NA	
17	Female ^b	-0.13	0.03	-0.04	0.12	0.12	-0.24	0.01	-0.05	0.00	NA

This table reports the descriptive statistics and correlations of the regression variables. The bold numbers on the leading diagonal are the square root of the AVE. All values higher than 0.07 and lower than -0.06 are statistically significant at 5 percent levels.

^a Standardized.

^b Dummy variable.

^c Measured in percent.

Regarding H1, which predicts a negative relationship between digital anxiety and work engagement, our quantitative results indicated that digital anxiety was negatively and statistically significantly associated with work engagement across all three models. This relationship remains significant, even under the control of additional structural and personal characteristics (-0.109; significant at $p < 0.01$; see Model 3 of Table 5). Thus, our results support H1. Our qualitative insights further substantiate this result (see Table 6). For instance, the employees indicated that concerns and fears related to the diffusion of digital technologies could result in “refusal among the employees we urgently need for the transformation” (survey comment).

Next, we examine H2a, H2b, and H2c, which predict a negative relationship between digital anxiety and digital trainings, digital affinity of peers, and transformational leadership, respectively. In Model 3, we can observe that digital trainings (-0.052; significant at $p < 0.10$), the digital affinity of peers (-0.061; significant at $p < 0.05$), and transformational leadership (-0.058; significant at $p < 0.05$) were negatively associated with digital anxiety, even under the control of personal characteristics, such as digital affinity, and structural characteristics, such as job autonomy. Given these results, we also find support for H2a, H2b, and H2c. Our qualitative insights further underpin these results (see Table 6,

TABLE 5
Results of Path Model Estimates and Model Fit Measures (SEM)

Direct Path Model Relationships

<u>Independent Variable</u>	<u>Dependent Variable</u>	<u>Prediction</u>	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Hypothesized Effects					
<i>Digital anxiety</i>	<i>Work engagement</i>	(-)	-0.211***	-0.144***	-0.109***
<i>Digital trainings</i>	<i>Digital anxiety</i>	(-)	-0.151***	-0.098***	-0.052*
<i>Digital affinity of peers</i>	<i>Digital anxiety</i>	(-)	-0.080***	-0.065**	-0.061**
<i>Transformational leadership</i>	<i>Digital anxiety</i>	(-)	-0.147***	-0.080***	-0.058**
Significant Alternative Paths					
<i>Digital trainings</i>	<i>Work engagement</i>		0.070**	0.030 ^{ns}	0.007 ^{ns}
<i>Transformational leadership</i>	<i>Work engagement</i>		0.363***	0.305***	0.305***
Significant Control Variable Effects—Structural Characteristics					
<i>Job autonomy</i>	<i>Work engagement</i>			0.192***	0.191***
<i>Job autonomy</i>	<i>Digital anxiety</i>			-0.152***	-0.140***
<i>Influence on digital decisions</i>	<i>Work engagement</i>			0.128***	0.100***
<i>Influence on digital decisions</i>	<i>Digital anxiety</i>			-0.111***	-0.067**
<i>Digital project involvement</i>	<i>Digital anxiety</i>			-0.152***	-0.086***
<i>Strategic responsibility</i>	<i>Work engagement</i>			0.061**	0.061**
<i>Foreign</i>	<i>Work engagement</i>			-0.088**	-0.086**
<i>Headquarters</i>	<i>Digital anxiety</i>			-0.074**	-0.075***
Significant Control Variable Effects—Personal Characteristics					
<i>Digital affinity</i>	<i>Work engagement</i>				0.129***
<i>Digital affinity</i>	<i>Digital anxiety</i>				-0.263***
<i>Age 40–49 years</i>	<i>Digital anxiety</i>				0.062**
<i>Age >49 years</i>	<i>Digital anxiety</i>				0.142***
Fit Measures					
Chi-square (df)			0.096 (1) ^{ns}	2.713 (6) ^{ns}	7.185 (8) ^{ns}
CFI			1.000	1.000	1.000
RMSEA			0.000	0.000	0.000
SRMR			0.002	0.005	0.006
Obs.			1,038	1,038	1,038

*, **, *** Indicate the significance of the coefficients at the 1 percent, 5 percent, and 10 percent levels, respectively.

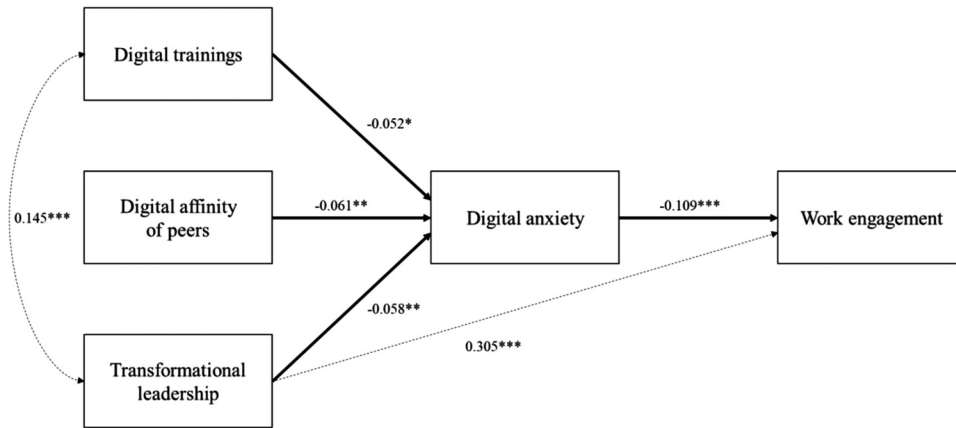
ns = indicates insignificance.

This table reports the results of path model estimates (SEM) and model fit measures. Standardized path coefficients and two-tailed tests are presented.

Panel A). These insights, for example, showed that digital trainings were important to counteract potential concerns over missing qualifications, as several survey respondents commented that they wished for greater educational offerings and efforts. However, interestingly, some interviewees also emphasized that they valued the trainings not necessarily due to the qualification gained but rather due to the exchange with colleagues or trainers related to the topic. Moreover, the interviewees emphasized the relevance of the digital affinity among peers to address employee concerns in a trustful manner and that leaders also should tackle the concerns of employees by taking employees along the digital transformation process and emphasizing a positive outcome of this process.

In addition to our hypotheses, the quantitative results further highlighted two significant relationships related to transformational leadership. First, the results revealed a significant positive correlation between transformational leadership and digital trainings (0.145; significant at $p < 0.01$) and, second, we can observe a positive direct path between transformational leadership and work engagement (0.305; significant at $p < 0.01$; see Model 3). Our qualitative insights also support these relationships, as, for example, the interviewees indicated that leaders could influence the employees' individual training programs (see Table 6, Panel B). As such, our results emphasize the relevance of transformational leadership for digital anxiety but also its crucial role for digital trainings and the work engagement of employees.

FIGURE 2
Empirical Results



*, **, *** Indicate the significance of the coefficients at the 1 percent, 5 percent, and 10 percent levels, respectively. This figure presents the results of the path model estimates (SEM). The results reflect the model specification of Model 3 in Table 5, in which all significant control paths of structural characteristics, such as job autonomy, and personal characteristics, such as digital affinity, are included. Standardized path coefficients and two-tailed tests are presented (n = 1,038).

TABLE 6
Qualitative Insights

Panel A: Qualitative Insights Regarding Hypothesized Relationships

Digital anxiety → Work engagement (H1)

Digital trainings → Digital anxiety (H2a)

Selected Qualitative Insights

- “We are currently making the clear mistake of associating digitalization directly with staff reductions. This fuels anxieties and refusal among the employees we urgently need for the transformation.” [Survey comment]
- “The divisions sometimes do not really collaborate when we want to set up a dashboard or something new. They do not want to disclose their data because they are just afraid of losing control.” [Interview 2]
- “If I automate something, then I may not know how the data comes together, where it comes from, and if there is an error in it... Then at least my impression is that people are more likely to say, I do not want to have automation here... They basically want to work their way down and are happy if they are not permanently interrupted in their standard work.” [Interview 3]
- “I would like to see comprehensive and regular information events to learn more about the possibilities of applications for digital technologies... Help with change management to reduce fears would be very important.” [Survey comment]
- “I would like to see more support for employees on their way to new technologies... Do not just send an email and now you are supposed to set everything up on your own, but instead conduct a presentation and briefing in the departments.” [Survey comment]
- “I think the exchange in trainings alone is very valuable, that you can also learn from each other and say ‘oh, here we have this and that problem’ and maybe they have already had similar experiences. So, I think that this exchange is very important [to address employee concerns].” [Interview 2]

(continued on next page)

TABLE 6 (continued)

Relationships	Selected Qualitative Insights
<i>Digital affinity of peers</i> → <i>Digital anxiety</i> (H2b)	<ul style="list-style-type: none"> • “One way is that one colleague approaches another and that they together explore the issues and problems and see if they can find a solution...A digitally savvy colleague can show the others how they can do something and then the others may solve it themselves the next time. I think this is an important means to address employee concerns.” [Interview 5] • “It is clear that if there is someone with whom you can talk about something like that [the digital transformation] and this person understands you, people also dare to ask ‘the stupid question’ in between...And when something like this happens, the feedback is often ‘oh, it is not that difficult.’ This is the key point when they realize that it is not that difficult. Then you have clearly won something.” [Interview 4] • “It is simply important that you pick up the people and slowly introduce them to something like that [the use of digital technologies]...Of course there are people who have a super affinity for the topics and are not afraid of them, but there are also people who think, ‘oh God.’ I once had a case where some of my colleagues did not even know where the file was when I put it in SharePoint. Does it still physically exist or not? So, I think these are the people you have to pick up as a more affine colleague in order to take away their worries.” [Interview 2]
<i>Transformational leadership</i> → <i>Digital anxiety</i> (H2c)	<ul style="list-style-type: none"> • “Managers should be trained more often in employee leadership. Especially in terms of social skills and caring for the concerns of employees.” [Survey comment] • “As a manager you have to give your employees the feeling that you do not have to go through this alone, that you can always come to them if there are problems... That everyone is taken along, that you are not left alone.” [Interview 4] • “Managers need to stop making negative statements about digitalization. Yes, this is a huge problem... We cannot just focus at the lower levels and ignore the upper levels.” [Interview 5]

Panel B: Further Qualitative Insights Related to the Main Constructs

Relationships	Selected Qualitative Insights
<i>Transformational leadership</i> → <i>Digital trainings</i>	<ul style="list-style-type: none"> • “I think managers need to communicate that there is a possibility or that it is not a problem when you need further support. If an employee thinks that discussing a technology half an hour is not enough for him, the leader needs to encourage him to book even another training hour or something. Knowing that this is possible also helps to reduce anxieties.” [Interview 4] • “The moment I book a seminar like this, I am also asked whether it has been agreed with my manager. I am lucky, I would say, that my boss is very supportive and would not say ‘no’... But yes, there again it probably has to do with the manager.” [Interview 2]
<i>Transformational leadership</i> → <i>Work engagement</i>	<ul style="list-style-type: none"> • “I also spent a year in financial reporting. And let me tell you, that was a rather conservative department... And I have to say that if you tried to somehow initiate something, it was actually so that it was rejected by the management level. I personally found that super unfortunate and demotivating. And that was also one of the reasons why I left [the department].” [Interview 2] • “When the management level makes disparaging remarks because things haven’t gone well in the past... that does not ensure that the willingness to get engaged in new things is there.” [Interview 5]

This table reports the selected qualitative insights to complement the results of our quantitative analysis. These statements are partly translated from its original language.

Additional Tests

Based on our *post hoc* interviews and the rich open comments, we also decided to conduct several additional analyses. In the following, we motivate these tests and present their results.

Cross-Sectional Variations: The Role of Organizational Responsibilities

Qualitative research emphasizes that contextual demands may influence how individuals actually translate emotions into actions (Carlsson-Wall, Kraus, and Messner 2016). For example, anxiety may even unfold in renewed effort instead of disengagement if this effort can be linked to a more explicit demand or a clear expectation of a positive outcome (Carlsson-Wall et al. 2016; Guénin-Paracini et al. 2014). In our main hypothesis, we argued that digitally anxious employees likely view more engagement as futile, as increasing engagement may (if at all) only have a highly uncertain positive effect on their personal situation with regard to a progressing digital transformation and that digital transformation endeavors come on top of their daily responsibilities. Our *post hoc* interviews supported this view. They indicated that most positions in the finance function involve routine tasks (e.g., data collection and processing) and that these employees “are so caught up in their day-to-day business that there is not much capacity for other topics” (Interview 5). However, the interviewees also highlighted that this did not hold for all employees. Some positions were explicitly linked to strategic responsibilities related to the steering of the finance function itself, such as positions related to “team leadership or specialist topics such as digitalization” (Interview 5). Employees with strategic responsibilities thus likely faced a more explicit demand to deal with strategic topics, such as digital transformation. These positions also had a higher status in the organization, as “the way back to an operative position is not an option, because if you have the overview and have gained insight into these topics, you want to apply your knowledge and have a broad impact” (Interview 5). As such, higher engagement could be linked to maintaining their position and status in the finance function. If employees in such positions experience digital anxiety, it may less likely create an impulse to disengage.

Based on this reasoning, we decided to empirically test whether differences in the organizational responsibility of employees affected our results. Specifically, we estimated our full model separately for employees with strategic responsibilities and those who do not have these responsibilities. Table 7 reports the results. We observed that the negative association between digital anxiety and work engagement was highly significant and negative for the employees with nonstrategic responsibilities ($p < 0.01$), whereas the relationship was positive and insignificant for the employees with strategic responsibilities ($p > 0.10$). We then tested whether the coefficient was significantly lower in the subgroup of employees with nonstrategic responsibilities versus those with strategic responsibilities. We found that the relationship between digital anxiety and work engagement was significantly more negative for the employees with nonstrategic responsibilities ($\chi^2 = 10.11$; $p < 0.01$). In addition, we found that all three organizational factors were negatively and significantly related to digital anxiety in the subgroup of employees with nonstrategic responsibilities. In sum, these results indicate that the specific type of organizational responsibility can be decisive for the consequences of digital anxiety and that the organizational factors are particularly relevant for those employees for whom digital anxiety has negative consequences.

Cross-Sectional Variations: The Role of Digital Affinity

The *post hoc* interviews repeatedly emphasized the importance of differentiating between employees who were digitally savvy and those who were less savvy. One interviewee questioned how trainings, leadership style, or the presence of digitally savvy peers could reduce digital anxiety for employees with low digital affinity. The interviewee outlined how a basic understanding of digital technologies could be required to attend to such factors. Another interviewee had a similar view, in particular with regards to trainings: “In order to get something out of trainings... A positive attitude towards technologies and the desire to get involved and get something out of it is needed” (Interview 5).

To better understand the role of digital affinity in the functioning of the mitigating factors, we examined whether our results differ between employees with high versus low digital affinity. Table 7 reports the results. We found that the negative effect of digital trainings on digital anxiety was significantly more pronounced for those employees with high digital affinity versus those with low digital affinity ($\chi^2 = 1.90$; $p < 0.10$). This finding supports the reasoning of our interviewees that high digital affinity can be helpful to effectively reduce digital anxiety with digital trainings. However, we still found a negative and significant relationship between digital trainings and digital anxiety for employees with low digital affinity (-0.071 ; $p < 0.05$). In line with this, one interviewee emphasized that “the exchange [in digital trainings] alone is very valuable” (Interview 2), which suggests that digital trainings also function as a kind of platform for social exchange that can help to address digital anxieties. We did not find significant differences in the mitigating effects of the two other factors between employees with high versus low digital affinity, respectively. In sum, the results indicate that digital affinity only partly explains differences

TABLE 7
Cross-Sectional Variations

Independent Variable	Dependent Variable	Organizational Responsibility		Digital affinity	
		Nonstrategic	Strategic	High	Low
Digital anxiety	Work engagement	-0.181***	0.037 ^{ns}	-0.067 ^{ns}	-0.163***
Coefficient difference test		β(nonstrategic) < β(strategic)? Yes ($\chi^2 = 10.11$; $p = 0.00$)		β(high) > β(low)? No ($\chi^2 = 1.56$; $p = 0.11$)	
Digital trainings	Digital anxiety	-0.103***	-0.039 ^{ns}	-0.179***	-0.071**
Coefficient difference test		β(nonstrategic) < β(strategic)? No ($\chi^2 = 0.81$; $p = 0.19$)		β(high) < β(low)? Yes ($\chi^2 = 1.90$; $p = 0.08$)	
Digital affinity of peers	Digital anxiety	-0.081**	-0.002 ^{ns}	-0.065 ^{ns}	-0.063*
Coefficient difference test		β(nonstrategic) < β(strategic)? No ($\chi^2 = 0.77$; $p = 0.19$)		β(high) < β(low)? No ($\chi^2 = 0.00$; $p = 0.96$)	
Transformational leadership	Digital anxiety	-0.075**	-0.076 ^{ns}	-0.061 ^{ns}	-0.090***
Coefficient difference test		β(nonstrategic) < β(strategic)? No ($\chi^2 = 0.00$; $p = 0.95$)		β(high) < β(low)? No ($\chi^2 = 0.28$; $p = 0.60$)	
Fit measure					
Chi-square (df)		5.087 (10) ^{ns}		13.754 (12) ^{ns}	
CFI		1.000		0.997	
RMSEA		0.000		0.000	
SRMR		0.008		0.012	
Obs.		826	212	256	782

*, **, *** Indicate the significance of the coefficients at the 1 percent, 5 percent, and 10 percent levels, respectively.
^{ns} = indicates insignificance.

This table reports the results of path model estimates (SEM) and model fit measures for our cross sectional analyses. Besides the presented relationships, control paths for all significant structural and personal characteristics are included. Standardized path coefficients and two-tailed tests are presented.

in the functioning of the three factors and that all factors have a negative and significant association with digital anxiety in the subgroup of employees with low digital affinity.

Digital Anxiety, Work Engagement, and Initial Digital Transformation Outcomes

To provide further insights into the consequences of digital anxiety, we decided to examine the association between digital anxiety, work engagement, and the realized digital transformation benefits. Most interviewees highlighted that the benefits of the just-initiated digital transformation of ManufactCo's finance function could not yet be sufficiently realized.¹¹ For instance, one survey respondent summarized that "the first steps toward digitalization (e.g., RPAs) are currently being taken, but there is still a long way to go" (survey comment). Nevertheless, we also found a few positive statements. For instance, one survey respondent indicated that "there is a 'role model' RPA in our department that made the work of one of our employees much easier" (survey comment). Based on that, we decided to explore whether digital anxiety and work engagement could help to explain the differences in how employees view the realized benefits of the digital transformation, whereas we acknowledge that this might just reflect initial transformation outcomes.

In our survey, we included a construct that captured the perception of the realized benefits of digital technologies in the daily work of employees (see Table 2). To test the effects of digital anxiety and work engagement on the realized digital benefits, we estimated a SEM, where we specified *digital anxiety* as our exogenous variable and *work engagement* and as our endogenous variables. We further included control paths of *realized digital benefits* the organizational factors and the structural and personal characteristics, similar to our previous analyses. Table 8 reports the results. We found that the indirect effect of digital anxiety on realized digital benefits through work engagement was negative and highly

¹¹ Given the rather early stage of digital transformation at our case company, we also decided not to use the realized digital benefit construct as the main dependent variable in our main analysis.

TABLE 8
The Relationship between *Digital anxiety* and Initial Digital Transformation Outcomes

Independent Variable	Dependent Variable	Model 1
Direct Path Model Relationships		
Main Variables		
<i>Work engagement</i>	<i>Realized digital benefits</i>	0.130***
<i>Digital anxiety</i>	<i>Realized digital benefits</i>	−0.026 ^{ns}
Indirect path model relationships		
<i>Digital anxiety</i>	<i>Realized digital benefits</i>	−0.014***
Fit Measure		
Chi-square (df)		5.666 (8) ^{ns}
CFI		1.000
RMSEA		0.000
SRMR		0.006

*, **, *** Indicate the significance of the coefficients at the 1 percent, 5 percent, and 10 percent levels, respectively.

ns = indicates insignificance.

This table reports the results of path model estimates (SEM) and model fit measures for the relationship between digital anxiety and digital transformation outcomes. Besides the presented relationships, control paths for the organizational factors (i.e., digital trainings, digital affinity of peers, and transformational leadership) as well as all significant structural and personal characteristics are included. Standardized path coefficients and two-tailed tests are presented.

significant (-0.014 ; $p < 0.01$). We also tested whether there was a significant direct path from digital anxiety to realized digital benefits but could not find support (-0.026 ; $p > 0.10$). These findings support the relevance of work engagement for digital transformation outcomes. These findings also indicate that digital anxiety could be a main barrier to digital transformation outcomes that mainly unfolds through a decrease in work engagement.

VI. DISCUSSION AND CONCLUSION

In this study, we investigate the role of employees' digital anxiety as a potential barrier to the digital transformation of the finance function. We take a self-regulation perspective to explain the emergence and consequences of digital anxiety. Based on a survey of more than 1,000 employees working in the finance function of a large multinational business group, we observe that digital anxiety is relevant among 40 percent of the respondents. We further find that digital anxiety is negatively associated with employees' work engagement, which further relates to fewer realized benefits from digital technologies. Finally, we argue and find that digital trainings, the digital affinity of peers, and transformational leadership can help to mitigate digital anxiety among employees. Overall, our study emphasizes the need to consider and address employee emotions in order to make progress with the digital transformation of the finance function.

Our study is not exempt from limitations, which, at the same time, offer fruitful directions for future research. First, we use a single-informant approach and capture self-reported perceptions of the dependent and independent variables at one point in time. We use several procedural remedies to address common method bias and nonresponse bias, and our assessment of the measurement model indicates good measurement properties. We also complement our quantitative results with qualitative insights to validate our theoretical assumptions. Although these steps help to mitigate potential concerns, we cannot rule out concerns related to reverse causality as our survey data were collected at one point in time. For example, less engaged employees might have a tendency to be more prone to negative emotions. We therefore encourage future research to extend our findings by, for example, investigating longitudinal or experimental data. Second, our results are based on data from employees working in the finance function, which allows us to link digital anxiety to the specificities of the finance function but limits the generalizability of our results. Future research could explore whether our results hold in other functional departments and how digital anxiety unfolds among other employee groups, such as at different management levels. Third, our data are restricted to one company, which eliminates potential concerns about firm-specific heterogeneity but could be extended to other firms and industries. It would be interesting to consider differences in control systems (e.g., the emphasis on result controls) and how they interact with digital anxiety.

Despite these limitations, our study provides first evidence on employee emotions toward the progressing digital transformation in the finance function. Identifying digital anxiety as a likely response of employees and outlining its

negative consequences for work engagement has important implications for practice. First, our study suggests that CFOs and finance managers should consider not only the technical prerequisites of the digital transformation but also the emotional reactions of employees. This is especially relevant for employees with responsibilities in the core field of the finance function, such as accounting, control, and tax, who likely experience conflicting demands between their daily responsibilities and the need to experiment with new digital technologies. Second, our study sheds light on organizational factors that help lead employees in the digital era. We outline the relevance of digital trainings, the presence of peers with high digital affinity, and transformational leadership as potential factors to mitigate the digital anxiety of employees. All factors should be carefully considered by managers aiming to prevent negative emotional reactions of employees toward the digital transformation.

Taken together, our study shows that considering employee emotions in the finance function is important for embracing digital transformation. We hope to encourage accounting scholars to build on our insights and further advance the knowledge of the role of emotions in the digital transformation of the finance function.

REFERENCES

- Agrawal, A., S. Eklund, J. Waite, and E. Woodcock. 2020. Finance 2030: Four imperatives for the next decade. <https://www.mckinsey.com/capabilities/operations/our-insights/finance-2030-four-imperatives-for-the-next-decade>
- Appelbaum, D., A. Kogan, M. Vasarhelyi, and Z. Yan. 2017. Impact of business analytics and enterprise systems on managerial accounting. *International Journal of Accounting Information Systems* 25: 29–44. <https://doi.org/10.1016/j.accinf.2017.03.003>
- Armstrong, J. S., and T. S. Overton. 1977. Estimating nonresponse bias in mail surveys. *Journal of Marketing Research* 14 (3): 396–402. <https://doi.org/10.1177/002224377701400320>
- Bala, H., and V. Venkatesh. 2016. Adaptation to information technology: A holistic nomological network from implementation to job outcomes. *Management Science* 62 (1): 156–179. <https://doi.org/10.1287/mnsc.2014.2111>
- Bandura, A. 1988. Organisational applications of social cognitive theory. *Australian Journal of Management* 13 (2): 275–302. <https://doi.org/10.1177/031289628801300210>
- Bandura, A. 1991. Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes* 50 (2): 248–287. [https://doi.org/10.1016/0749-5978\(91\)90022-L](https://doi.org/10.1016/0749-5978(91)90022-L)
- Barclay, L. J., and T. Kiefer. 2019. In the aftermath of unfair events: Understanding the differential effects of anxiety and anger. *Journal of Management* 45 (5): 1802–1829. <https://doi.org/10.1177/0149206317739107>
- Beaudry, A., and A. Pinsonneault. 2005. Understanding user responses to information technology: A coping model of user adaptation. *MIS Quarterly* 29 (3): 493–524. <https://doi.org/10.2307/25148693>
- Bedford, D. S., and R. F. Speklé. 2018. Construct validity in survey-based management accounting and control research. *Journal of Management Accounting Research* 30 (2): 23–58. <https://doi.org/10.2308/jmar-51995>
- Bellora-Bienengraber, L., R. R. Radtke, and S. K. Widener. 2022. Counterproductive work behaviors and work climate: The role of an ethically focused management control system and peers' self-focused behavior. *Accounting, Organizations and Society* 96: 101275. <https://doi.org/10.1016/j.aos.2021.101275>
- Bergmann, M., C. Brück, T. Knauer, and A. Schwering. 2020. Digitization of the budgeting process: Determinants of the use of business analytics and its effect on satisfaction with the budgeting process. *Journal of Management Control* 31 (1–2): 25–54. <https://doi.org/10.1007/s00187-019-00291-y>
- Bharadwaj, O. A., P. A. El Sawy, N. Pavlou, and A. Venkatraman. 2013. Digital business strategy: Toward a next generation of insights. *MIS Quarterly* 37 (2): 471–482. <https://doi.org/10.25300/MISQ/2013/37:2.3>
- Boedker, C., and W. F. Chua. 2013. Accounting as an affective technology: A study of circulation, agency and entrancement. *Accounting, Organizations and Society* 38 (4): 245–267. <https://doi.org/10.1016/j.aos.2013.05.001>
- Bozionelos, N. 1996. Psychology of computer use: Prevalence of computer anxiety in British managers and professionals. *Psychological Reports* 78 (3): 995–1002. <https://doi.org/10.2466/pr0.1996.78.3.995>
- Burns, J., and G. Baldvinsdottir. 2005. An institutional perspective of accountants' new roles—The interplay of contradictions and praxis. *European Accounting Review* 14 (4): 725–757. <https://doi.org/10.1080/09638180500194171>
- Carless, S. A., A. J. Wearing, and L. Mann. 2000. A short measure of transformational leadership. *Journal of Business and Psychology* 14 (3): 389–405. <https://doi.org/10.1023/A:1022991115523>
- Carlsson-Wall, M., K. Kraus, and M. Messner. 2016. Performance measurement systems and the enactment of different institutional logics: Insights from a football organization. *Management Accounting Research* 32: 45–61. <https://doi.org/10.1016/j.mar.2016.01.006>
- Carver, C. S., and M. F. Scheier. 1988. A control-process perspective on anxiety. *Anxiety Research* 1 (1): 17–22. <https://doi.org/10.1080/1061580880248217>
- Carver, C. S., and M. F. Scheier. 1990. Origins and functions of positive and negative affect: A control-process view. *Psychological Review* 97 (1): 19–35. <https://doi.org/10.1037/0033-295X.97.1.19>

- Chandra, K., F. Plaschke, and I. Seth. 2018. Memo to the CFO: Get in front of digital finance—Or get left back. <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/memo-to-the-cfo-get-in-front-of-digital-finance-or-get-left-back>
- Chang, H., C. D. Ittner, and M. T. Paz. 2014. The multiple roles of the finance organization: Determinants, effectiveness, and the moderating influence of information system integration. *Journal of Management Accounting Research* 26 (2): 1–32. <https://doi.org/10.2308/jmar-50802>
- Chanas, S., M. D. Myers, and T. Hess. 2019. Digital transformation strategy making in pre-digital organizations: The case of a financial services provider. *The Journal of Strategic Information Systems* 28 (1): 17–33. <https://doi.org/10.1016/j.jsis.2018.11.003>
- Christian, M. S., A. S. Garza, and J. E. Slaughter. 2011. Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology* 64 (1): 89–136. <https://doi.org/10.1111/j.1744-6570.2010.01203.x>
- Compeau, D. R., and C. A. Higgins. 1995. Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly* 19 (2): 189–210. <https://doi.org/10.2307/249688>
- Coutu, D. L. 2002. Edgar Schein: The anxiety of learning—The darker side of organizational learning. *Harvard Business Review* 80 (3). <https://hbswk.hbs.edu/archive/edgar-schein-the-anxiety-of-learning-the-darker-side-of-organizational-learning>
- Edler, V. B., E. P. Gardner, and S. R. Ruth. 1987. Gender and age in technostress: Effects on white collar productivity. *Government Finance Review* 3: 17–21.
- Elbashir, M. Z., P. A. Collier, and S. G. Sutton. 2011. The role of organizational absorptive capacity in strategic use of business intelligence to support integrated management control systems. *The Accounting Review* 86 (1): 155–184. <https://doi.org/10.2308/accr.00000010>
- Fehrenbacher, D. D., A. Ghio, and M. Weisner. 2022. Advice utilization from predictive analytics tools: The trend is your friend. *European Accounting Review* (forthcoming). <https://doi.org/10.1080/09638180.2022.2138934>
- Fornell, C., and D. F. Larcker. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18 (1): 39–50. <https://doi.org/10.1177/002224378101800104>
- Frey, C. B., and M. A. Osborne. 2017. The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change* 114: 254–280. <https://doi.org/10.1016/j.techfore.2016.08.019>
- Gardner, E., B. Render, S. Ruth, and J. Ross. 1985. Human-oriented implementation cures cyberphobia. *Data Management* 23: 29–35.
- Goretzki, L., E. Strauss, and J. Weber. 2013. An institutional perspective on the changes in management accountants' professional role. *Management Accounting Research* 24 (1): 41–63. <https://doi.org/10.1016/j.mar.2012.11.002>
- Guénin-Paracini, H., B. Malsch, and A. M. Paillé. 2014. Fear and risk in the audit process. *Accounting, Organizations and Society* 39 (4): 264–288. <https://doi.org/10.1016/j.aos.2014.02.001>
- Hanelt, A., R. Bohnsack, D. Marz, and C. Antunes. 2021. A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies* 58 (5): 1159–1197. <https://doi.org/10.1111/joms.12639>
- Hippe, A., B. Pellens, A. Roos, A. Oberauer, and P. Gall. 2022. Is the finance function ready for the future? Boston Consulting Group. <https://www.bcg.com/publications/2022/is-the-finance-function-future-ready>
- Hoe, S. L. 2009. Transforming finance for the future. *Journal of Organisational Transformation & Social Change* 6 (1): 65–77. https://doi.org/10.1386/jots.6.1.65_1
- Järvenpää, M. 2007. Making business partners: A case study on how management accounting culture was changed. *European Accounting Review* 16 (1): 99–142. <https://doi.org/10.1080/09638180701265903>
- Jensen, J. M., P. C. Patel, and J. G. Messersmith. 2013. High-performance work systems and job control: Consequences for anxiety, role overload, and turnover intentions. *Journal of Management* 39 (6): 1699–1724. <https://doi.org/10.1177/0149206311419663>
- Kline, R. B. 2015. *Principles and Practice of Structural Equation Modeling*, 4th edition. New York, NY: Guilford Press.
- Knauer, T., N. Nikiforow, and S. Wagener. 2020. Determinants of information system quality and data quality in management accounting. *Journal of Management Control* 31 (1–2): 97–121. <https://doi.org/10.1007/s00187-020-00296-y>
- Knudsen, D. R. 2020. Elusive boundaries, power relations, and knowledge production: A systematic review of the literature on digitalization in accounting. *International Journal of Accounting Information Systems* 36: 100441. <https://doi.org/10.1016/j.accinf.2019.100441>
- Labro, E., M. Lang, and J. D. Omartian. 2023. Predictive analytics and centralization of authority. *Journal of Accounting and Economics* 75 (1): 101526. <https://doi.org/10.1016/j.jacceco.2022.101526>
- Lapointe, L., and S. Rivard. 2005. A multilevel model of resistance to information technology implementation. *MIS Quarterly* 29 (3): 461–491. <https://doi.org/10.2307/25148692>
- Lawson, R., and T. Hatch. 2020. Preparing the finance function for technological change. *Strategic Finance* (October 1). <https://sfmagazine.com/Articles/2020/October/Preparing-the-Finance-Function-for-Technological-Change>
- Loh, C., M. M. Cheng, and R. Coyte. 2023. The effect of mood and information sequence on third party evaluation of escalating capital investment projects. *Management Accounting Research* 58: 100819. <https://doi.org/10.1016/j.mar.2022.100819>
- Maas, V. S., and M. Matějka. 2009. Balancing the dual responsibilities of business unit controllers: Field and survey evidence. *The Accounting Review* 84 (4): 1233–1253. <https://doi.org/10.2308/accr.2009.84.4.1233>

- Mahlendorf, M. D. 2014. Discussion of the multiple roles of the finance organization: Determinants, effectiveness, and the moderating influence of information system integration. *Journal of Management Accounting Research* 26 (2): 33–42. <https://doi.org/10.2308/jmar-10407>
- Mahlendorf, M. D., F. Kleinschmit, and P. Perego. 2014. Relational effects of relative performance information: The role of professional identity. *Accounting, Organizations and Society* 39 (5): 331–347. <https://doi.org/10.1016/j.aos.2014.05.001>
- Mahlendorf, B. E., and M. D. Weißenberger. 2021. Will they be business partner in the digital era? On the future of work and roles of controllers. *Schmalenbach IMPULSE* 1 (1): 1–19. <https://doi.org/10.54585/MLIC2203>
- Moll, J., and O. Yigitbasioglu. 2019. The role of internet-related technologies in shaping the work of accountants: New directions for accounting research. *The British Accounting Review* 51 (6): 100833. <https://doi.org/10.1016/j.bar.2019.04.002>
- Möller, K., U. Schäffer, and F. Verbeeten. 2020. Digitalization in management accounting and control: An editorial. *Journal of Management Control* 31 (1–2): 1–8. <https://doi.org/10.1007/s00187-020-00300-5>
- Oakes, H., and S. Oakes. 2015. An analysis of business phenomena and austerity narratives in the arts sector from a new materialist perspective. *Accounting and Business Research* 45 (6–7): 738–764. <https://doi.org/10.1080/00014788.2015.1081555>
- Podsakoff, P. M., S. B. MacKenzie, and N. P. Podsakoff. 2012. Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology* 63 (1): 539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Podsakoff, P. M., S. B. MacKenzie, R. H. Moorman, and R. Fetter. 1990. Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly* 1 (2): 107–142. [https://doi.org/10.1016/1048-9843\(90\)90009-7](https://doi.org/10.1016/1048-9843(90)90009-7)
- Quattrone, P. 2016. Management accounting goes digital: Will the move make it wiser? *Management Accounting Research* 31: 118–122. <https://doi.org/10.1016/j.mar.2016.01.003>
- Repenning, N., L. Löhlein, and U. Schäffer. 2022. Emotions in accounting: A review to bridge the paradigmatic divide. *European Accounting Review* 31 (1): 241–267. <https://doi.org/10.1080/09638180.2021.1908906>
- Resick, C. J., D. S. Whitman, S. M. Weingarden, and N. J. Hiller. 2009. The bright-side and the dark-side of CEO personality: Examining core self-evaluations, narcissism, transformational leadership, and strategic influence. *Journal of Applied Psychology* 94 (6): 1365–1381. <https://doi.org/10.1037/a0016238>
- Roozens, F., H. B. A. Steens, and L. L. Spoor. 2019. Technology: Transforming the finance function and the competencies management accountants need. *Management Accounting Quarterly* 21 (1): 1–14. <https://www.imanet.org/insights-and-trends/management-accounting-quarterly/maq-index/2019/fall-2019?ssopc=1>
- Sawers, K. M. 2005. Evidence of choice avoidance in capital-investment judgements. *Contemporary Accounting Research* 22 (4): 1063–1092. <https://doi.org/10.1506/2UKM-AW62-BNA6-0AP6>
- Schaufeli, W. B., A. B. Bakker, and M. Salanova. 2006. The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement* 66 (4): 701–716. <https://doi.org/10.1177/0013164405282471>
- Seppälä, P., S. Mauno, T. Feldt, J. Hakanen, U. Kinnunen, A. Tolvanen, and W. Schaufeli. 2009. The construct validity of the Utrecht Work Engagement Scale: Multisample and longitudinal evidence. *Journal of Happiness Studies* 10 (4): 459–481. <https://doi.org/10.1007/s10902-008-9100-y>
- Simon, H. A. 1967. Motivational and emotional controls of cognition. *Psychological Review* 74 (1): 29–39. <https://doi.org/10.1037/h0024127>
- Simonson, M. R., M. Maurer, M. Montag-Torardi, and M. Whitaker. 1987. Development of a standardized test of computer literacy and a computer anxiety index. *Journal of Educational Computing Research* 3 (2): 231–247. <https://doi.org/10.2190/7CHY-5CM0-4D00-6JCG>
- Smollan, R. K. 2017. Learning to cope with stressful organisational change. *International Journal of Work Organisation and Emotion* 8 (2): 148–167. <https://doi.org/10.1504/IJWOE.2017.086461>
- van der Merwe, A., and L. R. White. 2021. AI for decision analysis. *Strategic Finance* (February 1). <https://sfmagazine.com/articles/2021/february/ai-for-decision-analysis/>
- Venkatesh, V. 2000. Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research* 11 (4): 342–365. <https://doi.org/10.1287/isre.11.4.342.11872>
- Vial, G. 2019. Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems* 28 (2): 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>
- Vodanovich, S., D. Sundaram, and M. Myers. 2010. Digital natives and ubiquitous information systems. *Information Systems Research* 21 (4): 711–723. <https://doi.org/10.1287/isre.1100.0324>
- Wood, R., and A. Bandura. 1989. Social cognitive theory of organizational management. *The Academy of Management Review* 14 (3): 361–384. <https://doi.org/10.2307/258173>
- Zoni, L., and F. Pippo. 2017. CFO and finance function: What matters in value creation. *Journal of Accounting & Organizational Change* 13 (2): 216–238. <https://doi.org/10.1108/JAOC-12-2014-0059>