Towards New Perspectives on Digitalization: Developing a Multi-dimensional Work Identity Lens

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Abstract

Work identity deals with self-definition in work activities and memberships, which massively affect how employees react to digitalization. In the face of the changing world of work, there is increasing scholarly interest in work identity represented in numerous articles. Research produces several essential insights but appears fragmented in diverse conceptualizations and the investigation of multiple dimensions of work identity. Especially contributions in IS use a 'professional identity' conceptualization, which is fragmented and varies in definition clarity. We synthesize extant literature and offer a comprehensive work identity conceptualization to provide future research with orientation. The proposed conceptualization enables researchers to investigate individuals mutually based on their work-based self-identity, role identity, and social identities. Last, we present and discuss a research agenda that contributes to utilizing work identity as an analytical tool for digitalizing work.

Keywords: work identity, identity theories, literature review, digital work

1 Introduction

Work identity or work-based identity describes 'the aspects of identity and self-definition that are tied to participation in the activities of work (i.e., a doing job) or membership in work-related groups, organizations, occupations, or professions' (p.26) (Dutton et al., 2010). These self-definitions and memberships matter because they are the basis of perceptions and behaviors at the workplace–especially when it comes to change, innovation, and technology (Ashforth et al., 2008; Stein et al., 2013). Therefore, work identity is fundamental for understanding employees' perception of digitalization.

Tilson et al. (2010) define digitalization as a socio-technical process of applying digital technologies in broader social and institutional contexts. Accordingly, we use the term digitalization to describe incorporating digital technologies into the work context (Legner et al., 2017; Serrano & Boudreau, 2014; Stein et al., 2013), which leads to a complex interplay between digital technologies and the social surrounding (Benbya et al., 2020). In perspective to work arrangements, digitalization contains processes between various levels, such as the organization's characteristics, the team, and the job role (Dougherty & Dunne, 2012; Welbourne & Paterson, 2017).

Lately, the worldwide pandemic highlighted the ongoing digitalization challenging existent work arrangements (Wang et al., 2021). In remote work, for instance, retaining identification with work becomes challenging because individuals typically suffer from lower interaction with peers and, therefore, a lower sense of belonging (Wang et al., 2021). Besides the flexibility of where and when to work, digital technologies are increasingly used to automate tasks impacting employees' self-understanding (Stein et al., 2013; Strich et al., 2021). For instance, Strich et al. (2021) demonstrate how the identity of employees in the banking sector shapes their attitude towards artificial intelligence. In the case of the growing opportunities of digitalization, complete job profiles become increasingly tied to IT, which turns digital technologies into a basis for professionals' identity (Strich et al., 2021; Vaast & Pinsonneault, 2021). For example, the job of data scientists evolves around the use of digital technology for analysis (Vaast & Pinsonneault, 2021).

These examples highlight how to work identity is found to help understand the digitalization of work (Ashforth et al., 2008; Carter et al., 2019; Stein et al., 2013; Walsh & Gordon, 2008). It is, therefore, not surprising that research using a work identity lens is growing. Different disciplines (e.g., management, psychology, IS) employ work identity to explain processes and effects of digitalization (Ashforth et al., 2008; Caza et al., 2018) to explain employees' use of information technology (IT) (Stein et al., 2013), the design of digital work arrangements that support well-being, and productivity (Daniel et al., 2011), and individuals reactions to digitalization and their effects on behavior at work (Hafermalz & Riemer, 2020b). Overall, research exposes that digital technologies are gaining relevance for work identity construction, while work identity shapes the use of these technologies in everyday work (Vaast & Pinsonneault, 2021).

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Answering the question of how work identity can be conceptualized, Welbourne and Paterson (2017) propose a multi-dimensional construct that encompasses organizational identity, team identity, occupational identity, innovator identity, and job identity. The organization, the team, and the occupation serve as reference points of work identity, which relate to the social dimensions of work (Hafermalz & Riemer, 2020b). Research shows that identification with these foci becomes increasingly critical in a world of flexible and individualized work (Idowu & Elbanna, 2021). Organization, team, and profession represent social reference points that may cause a sense of belonging (Welbourne & Paterson, 2017). Tasks and job roles may hold the purpose of the everyday tasks and, thus, serve as a source of work identity (Ashforth et al., 2008). The degree of identification with the roles and tasks and the relation to innovation at work is reflected by job identity and innovator identity (Welbourne & Paterson, 2017). Consequently, recent research outside IS reveals that a comprehensive understanding of work identities' role in digitalization requires the consideration of multiple dimensions (Miscenko & Day, 2016) and various organizational levels (e.g., organizational culture, team dynamics, individual beliefs, etc.) (Carter et al., 2019).

Even though many IS studies investigate or use work identity, most do not specifically draw on an established theoretical basis (Stein et al., 2013; Strich et al., 2021). Moreover, the literature is theoretically fragmented by focusing on single work identity dimensions, such as occupational identity and organizational identity (Atewologun et al., 2017). In addition, identification with the digital technologies used at work, often conceptualized as IT identity, is considered a specific construct unrelated to other dimensions of work identity (Carter et al., 2019). This perspective might limit the explanatory power of the work identity construct as IT is increasingly interwoven with most jobs (Strich et al., 2021) and cannot be considered without its impact on other dimensions of work identity and vice versa (Carter et al., 2019). Thus, we assume that investigating the digitalization of work would benefit from cautiously linking different work identity dimensions (Stein et al., 2013). Such approaches would help to design work arrangements that similarly suit different organizational roles of individuals and prevent employees' resistance to digitalization (Caza et al., 2018; Mishra et al., 2012). In perspective to research and practice, this research investigates the contemporary understanding of work identity and its dimensions in IS and strives to offer theoretically based guidance on how to use work identity to research the digitalization of work: *What does IS research tell about the dimensions of work identity in digitalized work settings and its effects?*

This research aims to systematically integrate various work identification foci (organization, team, occupation, job, and digital innovation), which may contribute to multi-dimensional investigations for understanding employees' perception of digitalization (Carter et al., 2019). An organizing literature review is conducted to answer this question and to synthesize the perspectives used in IS. The review focuses on differences in construct conceptualizations (Schryen et al., 2017) in high-ranked and peer-reviewed journals and conferences (Webster & Watson, 2002). We propose a unified view of work identity in digitalized work settings and outline promising areas for further work identity research in IS.

To that end, a careful analysis of the theoretical foundations reveals various sources of an individual's work identity, which supports a better understanding of mechanisms explaining individuals' reactions toward digitalization (Caza et al., 2018). Hence, we briefly introduce the three major theoretical streams concerning identity, which reveal different mechanisms behind identity (Caza et al., 2018) and function as organizing criteria in reviewing and synthesizing work-identity-related research in IS.

2 Theoretical Background

Three major theoretical streams are concerned with identity—social identity theory, identity theory, and role identity theory. These streams approach the concept differently and, thus, reveal distinct reference points or foci that form an individual's identity (Caza et al., 2018). The degree to which one identifies with the foci is called identification (Ashforth et al., 2008). We introduce the theories below to shed some light on the origins.

Social identity theory defines social identity as 'that part of the individual's self-concept which derives from his knowledge of his membership of a social group together with the value and emotional significance attached to that membership' (Tajfel & Turner, 1979). More precisely, this theoretical perspective focuses on how an individual relates to the social structure (Davis et al., 2019). Accordingly, interpersonal behavior, which is directed toward others, is captured (Pan et al., 2019). According to this theory, individuals self-categorize themselves concerning group membership, which drives their behavior in terms of feeling 'in-group' or 'out-group' (Pan et al., 2019). Social identity theory, thus, assumes that identity is formed by the sense of belonging to a specific social group, such as a team, an organization, or a profession (Hogg et al., 1995). In the workplace, this sense of belonging influences individuals' attitudes and behaviors, including the perception and usage of the digital technologies.

Identity theory defines identity as 'how one person perceives themselves as different from others' (Stryker & Burke, 2000). Identity is here not seen as a result of how one relates to social structure, but rather as the result of one's perception of the uniqueness of attributes. These attributes are derived from individual behaviors, values, and emotions (Alvesson et al., 2008) and operate as internalized beliefs (Davis et al., 2019). These core become visible through personal narratives, which are

the foundation of narrative approaches, utilizing a self-storied perspective (Giddens, 1991). Researchers utilize this approach by investigating the stories individuals tell about themselves to understand how they perceive themselves (Stein et al., 2013). Consequently, identity theory emphasizes intra-personal dimensions (Pan et al., 2019), often referred to as personal or self-identity.

Role identity theory combines inter-personal and intra-personal perspectives by defining identity based on how individuals fulfill certain expectations to match their roles (Pan et al., 2019). Roles can be understood as shared understandings, which express the individuals' social position (Stets et al., 2020). Role identity theory assumes that individuals adapt their behavior according to the degree to which they identify with specific roles and expectations. The interactionist approach to identity, which evolved around the work of Goffman, elaborates on how identity is grounded in an interaction between different foci and dimensions (Goffman, 2021). Individuals present themselves to the outside how they want to be perceived (Goffman, 2021). From this perspective, the individual identity results from continuous interaction with the surrounding (Bullingham & Vasconcelos, 2013). In contrast to the highlighted streams above, this interactionist approach highlights dynamic mechanisms of identity rather than a part of the identity (Stets et al., 2020). Hence, our analysis draws on identity, social, and role identity theories because these streams provide insights into various aspects of the workplace (Welbourne & Paterson, 2017).

The three theoretical stances mediate between the social structure and the individual's self (Hogg et al., 1995). The theories differ concerning identity reference points on different levels (i.e., social groups, personal attributes, and role expectations) and how identity is formed. Thus, each theory emphasizes a different dimension and, thus, different roots of identity (Stets & Burke, 2000). Social identities define people in terms of membership in social groups, role identities define individuals based on what they do, and self-identities define individuals concerning abstract values and characteristics that characterize one as a distinct entity (Stets et al., 2020). Combining the theoretical lenses may lead to a more holistic view of work identity, which reveals different mechanisms behind individuals' perceptions and behaviors regarding digitalization (Caza et al., 2018). For instance, role identity theory explains how IT can lead to threats to individuals' identity in task understandings. In contrast, social identity supports the investigation of membership threats, and identity theory focuses on threatened values. Table 1 presents the different identity theory streams and their foci.

Table 1: Theories on identity and their foci

Social identity theory	**Identity theory**	**Role identity theory**
Membership Belonging	Values Beliefs	Roles Social position

As work is tied to meanings, happening in social surroundings, and roles on the job, a holistic concept of work identity must acknowledge the different foci proposed by the three theories on identity *(Caza et al., 2018)*. Following *Caza et al. (2018)*, we assume that combining the different perspectives will increase our understanding of the social and personal sphere of identity at work and how it relates to digitalization. Thus, we use the foci as categories for coding, organizing, and reviewing the usage of work identity in IS, as well as a basis for creating a unified perspective on work identity.

3 Methodology

Leidner (2018) suggests conducting a broad theorizing review to develop a new theoretical framework and bring different literature streams together if the current theoretical approach does not capture phenomena. We follow this recommendation since work identity research appears fragmented in discipline and theory (Caza et al., 2018). Synthesizing such phenomena builds on organizing the literature (Leidner, 2018). Therefore, we conduct a systematic literature review based on Webster and Watson (2002). A report on the research process increases the reproducibility of the results (Vom Brocke et al., 2015). Table 2 illustrates the process of studies' identification.

Table 2: Process of contribution identification

Step	**Criteria**	**No.**
Data collection		
1. Identifying articles	- A-ranked outlets - Keywords in full text: work identity, professional identity, occupational identity	77
2. Exclusion of articles	- Editorials and book reviews - Missing identity definition - Missing work context	36
3. Forward-backward search	- Identity as a central construct - IS outlet, peer-reviewed	50
Analysis		
4. Iterative development of the codebook	- Scope of the study - Utilized identity dimensions and theoretical lens - Data and method - Findings (antecedents, effects, nature of the identity construct)	15
5. Coding	Application of developed codes	45

During an exploratory screening of interdisciplinary identity research, the keywords 'work identity,' 'professional identity,' and 'occupational identity' were identified. We screened the full text of A-ranked IS journals (senior scholars' basket of eight) (AIS, 2022) and the A-ranked International Conference of Information Systems (ICIS) from 1995 to spot leading contributions (Webster & Watson, 2002). During this search, 77 articles were identified. The identified titles

and abstracts were screened to exclude editorials, book reviews, and contributions not dealing with identity-related constructs. In this regard, six articles were excluded from the analysis. While carefully screening full texts, further articles were excluded by applying the following exclusion criteria: (1) not defining an identity construct and (2) not relating to an organization or work context. As a result, 41 papers were excluded from the analysis, and the remaining pool was enriched by a forward-backward search, which delivered 14 more articles. These studies explicitly mention identity and IT and/or are published in IS or management journals. In the end, we coded 50 articles based on different kinds of empirical and conceptual work and, thus, support capturing 'the big picture' of research in IS.

The analysis relies on a coding procedure by two independent coders, deriving information based on a pre-defined category system. The category system was developed collaboratively and captures the studies' scope, research approach, utilized identity conceptualizations, and the studies' findings. The analysis was supported by MaxQDA. While coding the first fifteen articles, the codebook and the single codes were refined to design clear instructions for the coding procedure. During this process, the inter-coder reliability increased from 23% over 45% to 88%.

We identified and analyzed the constructs used in the IS research to identify the relevant dimensions of work identity in digitalized contexts. This approach represents a concept-centric analysis, which allows distinguishing different levels (Webster & Watson, 2002). This asset helps to manage the multi-dimensional nature of the work identity concept (Dutton et al., 2010) and allows the synthesis of the underlying identity theory lenses (Caza et al., 2018). To organize the literature systematically, we analyzed the identified work identity definitions based on the framework presented in Table 1.

4 Findings

Before we elaborating on the theories' and work identity concepts' usage in IS research and synthesize them, we present some general findings. Most literature focuses on the individual level when investigating work identity and digitalization. A core topic is the influence of digital technologies on identity formation and how identity influences individual perceptions and reactions to IT (Nach & Lejeune, 2010; Stein et al., 2013; Vaast et al., 2013; Vaast & Pinsonneault, 2021). Few studies focus on the team or organizational levels, such as Mishra et al. (2012), Shen and Khalifa (2013), and Van Akkeren (2009), indicating that identity also affects IS assimilation on the organizational level.

Before presenting the findings in greater detail, we need to note the issue of vague definitions and loose theorization we faced during the analysis. Finally, 14 out of 50 articles were excluded because they do not contain any identity definition. Moreover, only 14 of the remaining 36 articles are explicitly grounded in one of the three main identity theories. Social identity theory is, with five studies, the most prominent approach. Three studies elaborate on identity theory; only one study refers to role theory, while five studies integrate the different streams of identity research, mainly identity theory and social identity theory. However, we could access theoretical mechanisms by applying the framework outlined before, which implies that IS research utilizes various theoretical lenses and work identity dimensions to investigate IT phenomena at work.

However, we also found that the term *work identity*, used in other fields (Wang et al., 2021; Welbourne & Paterson, 2017), is not yet well-established in IS research. Most studies use the term *professional identity*, while only three articles explicitly refer to work identity (Idowu & Elbanna, 2021; Prester et al., 2019; Serrano & Boudreau, 2014). The definitions and conceptualizations of *professional identity* differ vastly. While some studies focus on the sense of being part of a profession and fulfilling certain expectations to match the role and thus build on ideas of role identity or social identity theory, most studies are not explicitly rooted in one of the leading identity theory streams. Table 3 summarizes the results and guides the following elaborations, which illustrate how theories are utilized and which aspects of work identity can be identified.

4.1 Identity theory

Identity theory is used in IS to investigate IT usage. For instance, Stein et al. (2013) take a self-storied perspective and reveal that different types of preferred identities determine usage types. Further studies (Stein et al., 2013; Zhu et al., 2020) show that work identity needs to be continuously constructed as a 'narrative of the self' and makes sense of the interplay between individuals' core beliefs and the environment (Nach & Lejeune, 2010), which changes during digitalization. This tream of research relates to the interactionist approach (Goffman, 2021) and does not identify a specific dimension of work identity (Goffman, 2021). They instead refer to *work centrality*, describing a source of self-realization and meaning in life, which refers to the general importance of work. (Dutton et al., 2010). Literature implies that this dimension is shaped by values of the individual, which impact the adoption and use of IT (Bernardi & Exworthy, 2020; Jussupow et al., 2018; Liu & Geertshuis, 2016).

Accounting for the significant role of IT in most work settings, IS research has introduced an additional construct rooted in identity theory—*IT identity*. Research revealed that relations between the extent to which IT is understood as a central part of the self (Carter & Grover, 2015, p. 932) and the intensive use of ERP systems hampered work-life balance (Zhu et al., 2020). IT identity, thus, seems to be a relevant dimension of work identity that helps to understand employees' perception

of digitalization. As a counterpart to IT identity, Carter et al. (2019) assume that anti-IT identity also refers to a negative self-image. However, IT and anti-IT identities are not at the end of a continuum as individuals can show absent and ambiguous identification with IT. This finding explains why some individuals react weakly to IT or different types of IT (Carter et al., 2019).

4.2 Social identity theory

IS employs social identity theory for investigating the implementation and use of IS in different work contexts. Regarding the shift of remote work, for instance, research shows increasing interest in investigating how IT facilitates social identification at work and other work outcomes, such as job satisfaction and performance. Findings show that digital technologies enable identification by easing social interactions among team members via information and communication technologies, which enable connectivity and, thus, a sense of belonging (Idowu & Elbanna, 2021; Prester et al., 2019).

In addition, IS research uses social identity theory to understand how membership in specific groups and the value and emotional significance attached influence individuals' attitudes toward IT. Particularly the significance of being a member of the organization (i.e., *organizational identity* (Bernardi & Exworthy, 2020)), the team (i.e., *team identity* (Seligman, 2000)), and the occupation (i.e., *occupational identity* (Brooks et al., 2011)) are identified as factors that influence individuals' perception of IT at work.

4.3 Role identity theory

The articles building on role identity theory show that characteristics of the job profile shape role-related work identity dimensions (e.g., expertise (Bernardi & Exworthy, 2020; Jussupow et al., 2018) and autonomy (Idowu & Elbanna, 2021; Jussupow et al., 2018; Prester et al., 2019; Strich et al., 2021)) and organizational specifics like hierarchies (Jussupow et al., 2018; Strich et al., 2021), which is expressed via task-related job roles. Findings show that dependent on these characteristics, IT can become a significant part of the professionals'

Table 3: Structure of work identity concepts in IS

Antecedents	Work identity dimension and constructs used		Effects
Personal beliefs (identity theory)			
Core values (Bernardi & Exworthy, 2020; Jussupow et al., 2018; Liu & Geertshuis, 2016)	*Work centrality*	Beliefs regarding the importance of work for personal life (Paullay et al., 1994, p.225)	User types/ behavior (Seligman, 2000; Stein et al., 2013)
Characteristics of IT (Zhu et al., 2020)	*IT identity*	The extent of understanding IT as a central part of the self (Carter & Grover, 2015, p. 932)	Extensive use/ work-life conflict (Zhu et al., 2020)
Social membership (social identity theory)			
Need for professional identification (Brooks et al., 2011) IT (Vaast & Pinsonneault, 2021)	*Occupational identity*	One's a commitment to the occupation, including more than simply the job within an organization (Noe et al., 1994, p.505)	IS adoption (Kimmerl, 2020; Liu & Geertshuis, 2016)
Boundary objects (Gal et al., 2008) Physical isolation (Bartel et al., 2012)	*Organizational identity*	The degree to which an individual conceives his or herself from the level of the organization (Ashforth et al., 2011, p.1144)	Assimilation (Mishra et al., 2012)
Perceived similarity/ belonging (Brooks et al., 2011; Idowu & Elbanna, 2021) Social interaction (Hafermalz & Riemer, 2020a, 2020b)	*Team identity*	Sense of being impacted by belonging to a work team (Welbourne & Paterson, 2017, p.322)	Performance/ job satisfaction (Alahmad et al., 2018; Lyu et al., 2020) Teams' image (Serrano & Boudreau, 2014)
Relatedness to job-specific roles (role identity theory)			
Expertise / social hierarchy (Bernardi & Exworthy, 2020; Jussupow et al., 2018)	*Job identity*	Degree of engagement with specific tasks in the job role (Paullay et al., 1994, p.225)	IT adoption (Liu & Geertshuis, 2016; Strich et al., 2021)
Job characteristics (Idowu & Elbanna, 2021; Jussupow et al., 2018; Prester et al., 2019; Strich et al., 2021) Role understandings (Bernardi & Exworthy, 2020; Kimmerl, 2020; Strich et al., 2021)	*Digital innovator identity*	Degree of self-definition as a person promoting new and innovative ideas (Welbourne & Paterson, 2017)	Participation/ managing IT projects (Bernardi & Exworthy, 2020; Van Akkeren, 2009)

identity and might enable a new perspective for the profession in terms of job roles (Vaast et al., 2013; Vaast & Pinsonneault, 2021). For instance, Kimmerl (2020) shows that the perception of social media depends on three role-based identities—subject expert, pedagogical expert, and didactical expert. These roles represent task-based professional identities that illustrate how individuals perceive their role in the work context (Caza et al., 2018; Liu & Geertshuis, 2016).

Regarding identification foci of role-based identity, IS research mainly refers to the general *professional job role* and rarely elaborates on specific constitutes of this role (e.g., tasks). This vague conceptualization might hamper the accumulation of knowledge as the literature indicates more specific relationships with digitalization. For instance, it is shown that expertise and the individual's position in the organizational hierarchy might be changed during digitalization and therefore cause a threat to identity (Strich et al., 2021). Another dimension of work identity is *digital innovator identity* (Bernardi & Exworthy, 2020). One example of a study focusing on the role of the tasks' nature is the work of Prester et al. (2019), drawing on the gig workers' autonomy as a vital source of identification with this innovative job role. Hence, the job characteristics and role understandings are antecedents of an innovator identity. This perspective illustrates how the individual's action roots in a role identity, referring to change and innovation (Welbourne & Paterson, 2017).

4.4 Multi-dimensional approaches

Overall, findings suggest that to enrich our understanding of the nature, mechanisms, and effects of work identity in digitalized work settings, broaden the scope and overcome the focus on specific work identity dimensions are needed. Taking such a multi-dimensional perspective acknowledges the relevance of the individual and its beliefs and the social contexts to shape employees' perceptions and reactions to IT (Carter et al., 2019; Schellhammer, 2010; Tyworth, 2014).

The three studies that use the term *work identity* all use a multi-dimensional perspective on work identity, including professional, occupational, and organizational identities. Similar to the work of Ashforth et al. (2008), these studies focus on aspects of the social structure as well as the roles of the workers and, thus, account for role identity and social identity.

Studies using the term *professional identity* or *professionals' identity* to study work-based identity often also cover multiple dimensions (for an overview, please see Table 4 in the online appendix[1]). Only Stein et al. (2013) consider all three identity perspectives. They define professional identity as a set of meanings defining who one is as a person, role occupant, and group member. In addition, Strich et al. (2021) and Jussupow et al. (2018) illustrate how work identity relies on social belongings and role understandings, while the latter refers to threats of social positioning and tasks that affect identification. These contributions combine a role identity and a social identity perspective by investigating changes in role understandings and sense of belonging.

Aiming for a clearer picture of the theoretical foundation of work identity in IS and its multiple dimensions, we analyzed the definitions used in the studies dealing with *professional identity* and related them to the three major theories dealing with identity. This analysis underlines the knowledge gained up to this point: no matter what term is used, work-related identity is multi-dimensional in nature. Furthermore, the effects and influences on work identity identified in the studies vary depending on the theoretical perspective and related foci. Thus, findings imply that different theoretical perspectives accentuate different sources of workers' perceptions and reactions towards digitalization. To capture these mechanisms, we suggest considering the following work identity dimensions, which were gathered during the analysis above:

Findings show that *occupational*, *organizational*, and *team identities* are established social identities in IS literature (Greco et al., 2022). The focus is on the individual's identification with social groups on different levels: the profession, the organization, and the team. To consider identification with roles at work, IS research theorized on identification with specific tasks in the job role (i.e., *job identity* (Bothma et al., 2015)). The *digital innovator identity* represents an additional role-based work identity dimension related to digitalized workplaces. IS research shows that adapting and actively managing digital innovation becomes increasingly important in the modern world of work (Welbourne & Paterson, 2017), and the degree to which employees identify with the innovative use of digital technologies impacts their perception and reaction to IT.

Last but not least, *work centrality* and *IT identity* are found to be central dimensions of work identity rooted in personal beliefs. Therefore, *work centrality* is a vital dimension of work identity (Seligman, 2000). Work centrality is shaped by the individual's core values (Bernardi & Exworthy, 2020; Jussupow et al., 2018; Liu & Geertshuis, 2016) and, thus, describes a source of self-realization and meaning in life (Dutton et al., 2010), which refers to the general importance of work. A specific contribution of IS literature to work identity research is the consideration of digital technologies themselves as reference points for identification at work (Stein et al., 2013; Vaast & Pinsonneault, 2021). Carter and Grover (2015) define IT identity as 'the extent to which an individual views use of an IT as integral to their sense of self. IT identity relates to internalized beliefs

[1] Available through the following URL: https://doi.org/10.6084/m9.figshare.20710102

and emotions regarding the relatedness and dependence of IT (Carter, 2013) and is found to serve as a powerful tool for analyzing IT usage at work. While centrality is shaped by the individual's core values (Bernardi & Exworthy, 2020; Jussupow et al., 2018; Liu & Geertshuis, 2016), IT identity depends on the characteristics of digital technology (Zhu et al., 2020).

In summary, in our analysis of work-related identities in IS, three dimensions are dominant: *personal beliefs*, *social membership*, and *relatedness to job-specific roles*. In these dimensions, seven primary constructs are identified: *work centrality*, *IT identity*, *occupational identity*, *organizational identity*, *team identity*, *job identity*, and *digital innovator identity*.

5 Discussion

This research aims to analyze and summarize IS research findings concerning the dimensions of work identity in digitalized work settings and its effects. In the face of the emerging research body on work identity issues in digitalization (Ashforth et al., 2008; Caza et al., 2018), the systemization and synthesis of IS research help to accumulate existing knowledge (Leidner, 2018). Below we outline the theoretical and practical implications in detail.

5.1 Implications

In this research, we have identified work identity dimensions relevant to digitalized work contexts and related them to the primary identity theories. In doing so, we could demonstrate that work identity involves multiple dimensions and that IS research does seldomly involve all dimensions. Following other disciplines (e.g., organizational psychology and sociology), reducing fragmentation and using a multi-dimensional lens would help better explain individuals' perceptions and reactions related to technology-related change, innovation, and technology at work (Ashforth et al., 2008; Stein et al., 2013). By organizing extant research in IS, we identify the relevant dimensions of work identity that consider the socio-technical process of digitalization, which is characterized by an interplay between digital technology, an individual, and the context (Dougherty & Dunne, 2012; Tilson et al., 2010; Welbourne & Paterson, 2017).

As shown, the theory of identity determines which phenomena can be captured and analyzed (Caza et al., 2018; Strich et al., 2021). Synthesizing the three theoretical lenses clarifies the fragmented use of identity in IS, which uses the narrower term *professional identity*, while other disciplines, such as management, applied psychology, and social sciences, refer to work identity. In addition, the synthesis allows for extensively uncovering the mechanisms that drive employees' attitudes and behaviors in digitalized work settings. By revealing the focal point of identification used by the different theories and the constructs used in extant research in IS, our research offers guidance in selecting a sound theoretical base and meaningful constructs for investigating digitalization at work. While social identity reveals the effects of the relationship with peers at work, role identity helps to investigate how the perception of digital technologies is affected by the positioning of the individual in the organizational hierarchy (Strich et al., 2021), and identity theory is beneficial when researchers are interested in inner states relying on personal attributes and experiences, for instance. By proposing a multi-dimensional perspective, we also demonstrate how social identity theory, identity theory, and role identity approaches complement each other.

The work identity concept proposed here encompasses three dimensions and seven constructs. It adapts the conceptualization of Welbourne and Paterson (2017) to the context of IS, particularly in digitalized work settings. Besides refining the theoretical underpinning by referring each dimension to a theoretical lens, we propose relevant constructs per dimension. Extending the proposals of Welbourne and Paterson (2017), we suggest identification with specific digital technologies (i.e., *IT identity*) as well as identification with tasks that relate to promoting new and innovative ways to work with digital technologies (i.e., *digital innovation identity*) (Tilson et al., 2010) are essential parts of work identity in digitalized work contexts (Stein et al., 2013; Vaast & Pinsonneault, 2021). Furthermore, we identify *work centrality* as an additional dimension, enriching an identity theory perspective. Even though *work centrality* is established in organizational psychology (Paullay et al., 1994), Welbourne and Paterson (2017) do not exploit this personal identity logic. Therefore, our research indicates that a self-storied perspective may support an employee-centered paradigm behind digitalization research (Stein et al., 2013).

From a perspective to a socio-technical paradigm, this research could serve as a starting point for improving our understanding of how various work identity dimensions interrelate. Findings indicate that, for instance, the *digital innovator identity* might be influenced by characteristics of other work identity dimensions (e.g., *organizational identity*) (Carter et al., 2019). A theory-based systematization of work identity dimensions reveals which aspects operate on similar mechanisms. For instance, we could observe how a sense of belongings to various levels (organization, team, and profession) shapes opportunities for digitalization. Moreover, core values relate to the general understanding of work and IT, and roles refer to the individuals' tasks and their role in the work surrounding. This step contributes to identity literature which claims to investigate the relationship between these dimensions (Caza et al., 2018).

Furthermore, the overview highlights relevant reference points that enable practitioners to systematically target various aspects of the work environment (e.g., organization, team, occupation, role) (Welbourne & Paterson, 2017). For example, if

organizational identity negatively impacts the perception of ICT, managers should elaborate on how digital technology aligns with organizational goals. If digital technology impacts the job profile of an employee, leaders can think of redesigning tasks by bundling them in a way the employee feels comfortable with.

5.2 Limitations and further research

The scope of this study is to understand the conceptualizations of work identity and work-based identities in A-ranked IS publications. Therefore, the following approach warrants research quality but holds the disadvantage of not capturing all conceptualizations in the IS field (Webster & Watson, 2002). Thus, conducting a keyword search in databases like ProQuest and Web of Science would enrich the findings in this study. Furthermore, studying literature from other disciplines, such as management, applied psychology, and social sciences, can improve our understanding of work identity by collecting additional dimensions (e.g., gender (Miscenko & Day, 2016)). Further research might also compare the mechanisms behind the highlighted dimensions.

Based on our analysis, we assume that the different dimensions of work identity impact the process and outcomes of digitalization and that they will mutually influence each other (Miscenko & Day, 2016). For instance, professional and organizational identities seem related but show independent effects (Brooks et al., 2011). Likewise, digitalization might not affect the professional identity but job identity. However, further research is needed to uncover these mechanisms. Also, we assume that not all work identity dimensions are relevant to all types of IS and research designs. In this regard, our understanding would benefit from research applying configurational approaches that investigate associations between the work identity dimensions, the degree to which individuals identify with the various reference points, and digitalization outcomes.

During our research, we identified articles using a self-storied perspective. For instance, Stein et al. (2013) use a narrative analysis to identify identity types, and such an approach accentuates the personal dimension of identity (Giddens, 1991). We also see that other studies use an interactionist approach (Goffman, 2021) for investigating individuals' self-representation via digital technologies (Bullingham & Vasconcelos, 2013). Exploiting these perspectives would probably highlight the relevance of interpersonal interaction, which supports a dynamic perspective on work identity over time. Building on our conceptualization and using such approaches could also enhance our understanding of how the work identity dimensions interrelate.

Acknowledging the different theoretical perspectives on work identity and the contributions of IS, this study indicates that IS research could benefit from considering the underlying theoretical lenses of work identity more carefully and combining the different perspectives. Thus, we motivate further research on digitalization to use a multi-dimensional work identity construct that encompasses role identities, social identities, and personal identities. To support these endeavors, we suggest a work identity conceptualization that builds on the general discourse on work identity (Bothma et al., 2015; Caza et al., 2018; Welbourne & Paterson, 2017) and aims to synthesize the different perspectives and consider all relevant reference points for digitalization at work. We expect that research that builds on these considerations and further elaborates the understanding of work identity will yield essential insights into how digitalization will shape healthy and productive workplaces (Ashforth et al., 2008; Carter et al., 2019; Stein et al., 2013; Walsh & Gordon, 2008).

5.3 Conclusion

This research represents a step toward a work identity concept capturing relevant dimensions for understanding employees' reactions in digitalized work settings. Acknowledging the limitations, mainly in the narrow scope of high-ranked IS outlets, our perspective on work identity might inspire further research. Future studies might empirically test the significance and interrelations of individuals' identification with the proposed reference points in the three dimensions. We encourage interdisciplinary researchers interested in digitalization at work to consider this study's findings and enrich our understanding of the nature, antecedents, and effects of work identity in digital workplace contexts.

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