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Contents

Editor's Letter

The current issue of the *Nordic Journal of Business* features two peer-reviewed articles. In the first article, Juha P. Kinnunen, Anu Puusa and Heli Hallikainen focus on the concept of individual resilience in organizations by conducting a conceptual analysis of articles published in peer-reviewed journals. The second article by Pirkko Jaatinen and Salme Näsi addresses the diffusion of information technology innovations in financial accounting by examining the main arguments and rhetorical strategies used to promote these innovations in professional accounting journals.

I hope you enjoy reading the interesting articles included in this issue of the *Nordic Journal of Business.*

Sami Vähämaa
Editor
Nordic Journal of Business

Individual Resilience in Organizations in the Business Context: A Conceptual and a Bibliometric Analysis

Juha P. Kinnunen, Anu Puusa and Heli Hallikainen

Abstract

While individual resilience has been extensively examined within organizational contexts, its conceptual clarity, especially in the business context, remains a subject of concern, necessitating further research. This study addresses this research gap by conducting a conceptual analysis of 97 scientific articles from international peer-reviewed journals, supplemented with bibliometric analysis, about the concept of individual resilience in organizations in the business context. The findings reveal that it is an interactive process influenced by the social environment and the organization itself. It can manifest before, during, or after encountering unusual situations or challenges and can take various forms, such as state-, outcome-, trait-, or process-based resilience. The study introduces a comprehensive model of individual resilience in organizations in the business context, encompassing critical elements, antecedents, and consequences. This model offers practical insights for enhancing leadership and establishing supportive mechanisms, while also serving as an agenda for future research.

Keywords

Individual resilience, Conceptual analysis, Bibliometric analysis

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1. Introduction

In the scholarly literature, resilience has been extensively studied from a variety of perspectives and across different fields of science. In organizational context, resilience is a topical and multi-level (individual, team, organizational) matter: the word resilience is increasingly being used in organizational everyday speech wherein resilience plays an important role, particularly amid turbulence and changes. Business and management consultants increasingly point to resilience as a concept that relates to organizational change processes, which have increased and are widely seen as necessary also for according to scholars (e.g. Shrivastava et al., 2021). Moreover, resilience has a long-running growing popularity as a research topic among individuals and communities (Vanhove *et al*., 2016; Smith *et al*., 2020), e.g. due to its recognized strategic importance in today's turbulent environment for organizations (Luthans *et al*., 2004; King *et al*., 2016; Sahni *et al*., 2021). However, in the consultant language, which plays its own significant role in the life of organizations, individual resilience is sometimes oversimplified and referred e.g. to as a change capacity (Resilio, 2020; Mansourian and Moore, 2022).

Additionally, although resilience has been widely studied at multiple levels (individual, team and organizational) (e.g. Sudmeier-Rieux 2014; Britt *et al.,* 2016; King *et al.,* 2016; Linnenluecke 2017; Hartmann *et al.,* 2019; Raetze *et al.,* 2021), individual resilience as a phenomenon in organizations in the business context still seems to raise confusion. As Fisher *et al.* (2019, 584) note; "*there remains much work to be done in terms of understanding resilience as it occurs in organizations*". Furthermore, as Rodgers (2000) points out, the context of the conceptual analysis research matters for the use and understanding of the concept.

In a broad review, with a focus on psychological (i.e. individual-level) resilience in the U.S. Military, Meredith *et al.* (2011) found altogether 104 different definitions for individual resilience. Britt *et al.* (2016) call for research on individual-level resilience and emphasize that resilience is commonly mistaken as being associated with organizational stress. They add that this could be due to the absence of a clear definition of what individual resilience means in organizations (Britt *et al.,* 2016). There have also been calls for conceptual development and for further research on resilience at the individual employee level (Britt *et al*., 2016; King *et al*., 2016). Additionally, Fisher *et al.* (2018) call for further research on adversity triggers and resilience outcomes, mechanisms and promoting factors in an organizational context.

Since those calls, several studies have attempted to define individual resilience in organizations. Hartmann *et al.* (2020), for example, define individual resilience in organizations as a process of development that emerges in response to a range of situations and leads to a positive demonstration of adaptability. Also, Fisher *et al.* (2019, 592) adopt the process-view and define resilience as: "*the process by which individuals are able to positively adapt to substantial difficulties, adversity, or hardship*." It is clear, therefore, that nowadays, there is a fairly good definitional understanding of individual resilience within organizations. However, in our view, this understanding is not fully congruent (for example due to a "*missing clarity*" [Raetze et al. 2021, p. 637]) and does not fully capture individual resilience in organizations in the business context, which can be seen to involve a particular kind of turbulence and, for example, constant and rapid change and the resulting particular strain and stress (see e.g. Giorgi *et al.,* 2017; Accenture 2018, see also Giustiniano *et al.,* 2020).

Individual resilience, which refers to an individual's flexibility and adaptability to change and unpleasant situations (Stein *et al*., 2022), and which is widely seen as a part of Psychological Capital, is an important asset, as is also team-level resilience, especially in relation to management in e.g. organizations in the business context (see e.g. Savolainen *et al.,* 2019). For clarification, according to Luthans *et al.* (2007), Psychological Capital (PsyCap) means an individual´s positive psychological state of development which is characterized by hope, (self-)efficacy, resilience and optimism. Such research, the knowledge from which is needed in leadership and organizational life in general, and which can also directly inform business strategy in relation to strengthening the capacity of individuals and the survival of communities, has also been recently called for (e.g. DiBella *et al.,* 2023, see also Borg *et al.,* 2022). Consequently, based on systematically searching and analysing the academic organizational and management literature, we fill the existing research gaps by conducting a conceptual analysis, complemented with a bibliometric analysis. We focus on clarifying the concept of and revealing antecedents and consequences of individual resilience in organizations in the business context.

In particular, one of our practical contributions relates to the previously called-for understanding of the utility of resilience as a personal resource in organizational life (e.g. Hartmann *et al.,* 2020). Teams and organizations are made up of individuals and their resources and we additionally see our research here as contributing to the research on team- (and organizational) level resilience that has been called for (see e.g. Borg *et al.,* 2022). One of the theoretical and practical contributions of our article lies in providing highly useful insights for further research in trying to understand the components, drivers, influences and factors of individual resilience in organizational life and especially in business context.

Through a conceptual analysis, we aim to clarify 1) the critical elements of individual resilience in organizations in the business context and 2) the factors that influence it. We perceive a particular need for our research in the turbulent world of organizations in the business context, which guided our choices for the selection of the search criteria. As a conclusion, we make a model that can also be used as the agenda for future research, as we noticed that the research data did not provide a perception that took into account all aspects and that adequately reflected the nature of business and also management (which we see as intrinsically linked to organizations and the business context) contexts in organizational life. Furthermore, we seek to 3) clarify the antecedents and consequences of individual resilience in organizations in the business context and how it manifests itself in social reality. At the end of the study, we also discuss the managerial implications. Our objective is not only to enhance organizational performance and efficiency through individual resilience but also to enhance the survival, coping, and well-being of the employee.

In our study, we integrate individual and organizational levels because as told, organizations are made of people and we believe the integration of these two levels is crucial for the reason that in the ever-changing work environment (e.g. Shrivastava *et al.,* 2021), factors related to both the organizational level (e.g., efficiency, culture) and the individual level (e.g., endurance and well-being) are highly important in the best possible survival (see e.g. Kuntz *et al.,* 2017; Tonkin *et al.,* 2018; Dhoopar *et al.,* 2022). However, our message is also that organizational actions, such as leadership (supportive, servant, positivity, etc.) and culture-related initiatives (support practices, interaction, etc.), can contribute to supporting resilience at the individual level (see Hartmann *et al.,* 2020; Mokline & Ben Abdallah, 2021). In our view, for example, individuals fare better in the workplace when they naturally possess qualities associated with resilience. On the other hand, as a pre-assumption, we believe that by combining personal resources, resilience can evolve from an individual trait towards a community trait (team-level, organizational level).

Naturally, individual-level resilience is evident in other areas of life besides organizations. Therefore, we consider it important to explore next, as a clarifying etymological introduction, the dimensions of resilience through a historical journey. After that, we move to bring out current research on individual resilience in organizational and management contexts and the related constructs.

2. The concept of resilience – a historical journey

2.1. Etymology of the concept of resilience

The term "resilience" is an old and polysemic term that originates and has been studied in different fields of science. According to today´s understanding, the etymology of resilience derives from the Roman Latin resilire, resilio or resilientia which can be translated to jump, to leap, to bounce back – the fact of avoiding or the action of rebounding (Siambabala *et al.*, 2011; Alexander, 2013; see also Harper, 2021; Oxford English Dictionary, 2022). In science, the term resilience was used for the first time by Sir Francis Bacon in 1625 when he used the term resilience to illustrate the strength of the bouncing back echo (Alexander, 2013). Resilience, borrowed from natural sciences (physics or ecology), became a research topic in anthropology in the first half of the 20th century, due to the World Wars and the recession. Thereafter, resilience was increasingly studied in the field of psychology in the decades after the Second World War. For example, Tyhurst (1957) studied how individuals react to disasters.

In the 1960s, 1970s, and 1980s pioneering resilience researchers such as Garmezy (1974), Rutter (1979) and Werner and Smith (1982) studied resilience in the field of developmental psychology. In the 1990s, the concept of resilience began to attract research interest as a research topic within organizational and management studies and the interest increased exponentially at the turn of the millennium and continued its strong growth in the 2010s (Ollier-Malaterre, 2010; Cooper *et al.*, 2019) and thereafter, the popularity has only increased (Vähäkangas, 2010; Raetze *et al.*, 2021). It can be stated that the idea of physical resilience (i.e. physical strength of material) was "*extrapolated to psychological resilience*" (Meredith *et al.*, 2011, 2) referring to individual resilience.

2.2. Individual resilience in organizational and management research and the related constructs

At the individual level, resilience has been studied, in addition to being called individual resilience, in an organizational context at least as a career resilience (Abu-Tineh, 2011), employee resilience (Tonkin *et al.*, 2018; Teng-Calleja *et al.*, 2020), worker resilience (Fandiño *et al.*, 2019), entrepreneurial resilience (Santoro *et al.*, 2020), ego-resilience (Block and Block, 1980; Ferreira *et al.*, 2018), psychological resilience (Fletcher and Sarkar, 2013; Meredith et al., 2011; Hadjielias *et al.*, 2022), emotional resilience (Sahni *et al.*, 2021), collective resilience (Srour *et al.*, 2021), innovator resilience (Moenkemeyer *et al.*, (2012) and personal resilience (Labrague and Santos, 2020). Some researchers also distinguish between employee resilience (meaning e.g. maintaining productivity) and individual resilience (meaning e.g. personal ability to survive and thrive) (Tonkin *et al.*, 2018; Bardoel and Drago, 2021).

Accordingly, Luthans *et al.* (2007) define individual resilience, as a part of Psychological Capital (i.e. a positive psychological *state* characterized by hope, [self-]efficacy, resilience and optimism), popularly as: "*when beset by problems and adversity, sustaining and bouncing back and even beyond to attain success*" (p. 3). However, there are several other definitions of individual resilience. According to Fletcher and Sarkar (2013), most of these include "*two core concepts: adversity and positive adaptation*" (p. 12).

The resilience of an organization is largely made up of the resilience of its individuals. However, organizational resilience has its own definition, which, according to Hollnagel (2006), is: "*the ability of a system or an organization to react to and recover from disturbances at an early stage, with minimal effect on the dynamic stability*" (p. 16).

In the present study, we acknowledge the different nuances and levels surrounding the concept of resilience within organizations. However, we focus on individual resilience and, for the sake of clarity and despite the various nuances, we use only the term individual resilience to which we hereafter refer as resilience. It has been noted that the words resilience and resiliency are "*just different forms of the same word, but in today's English, ´resilience´ is far more common than ´resiliency´, especially outside the U.S. and Canada*" (Grammarist, 2009–2014). Consequently, in everyday speech, the term resilience is commonly used to describe both. Also, the terms resilience and resiliency are sometimes used interchangeably in the literature. Moreover, it must be emphasized that the concepts are not entirely synonymous. Hanson and Keplinger (2021) clarify that "*resilience as a capacity is known as resiliency*; [which] *prepares all for future stress, change and disruption, and is likely beneficial to sustainability over time*" (p. 450). Related to this, resilience has also been defined as bouncing forward, which is an optimistic psychological view (Siambabala et al., 2011). Thus, resiliency refers more to pre-adversity capacity and resilience than to post-adversity survival.

For the sake of balance, it should be noted that individual resilience can also have some negative dimensions in an organizational context. According to Britt *et al.* (2016), problems can be related, for instance, to stigmatization (a non-resilient person is somehow deficient, etc.), which can result in, for example, not seeking help when needed and in a timely manner. This can have adverse effects on the survival of the whole organization in the long run. Moreover, adapting from e.g. Hartman et al. (2019), some resilient individuals may act as "positive change agents", while others may focus on resisting necessary changes while encouraging others to join the resistance and consequently, this kind of unconstrained "negative change agency" can cause potential problems for resilience in an organization at multiple levels (individual, team and whole organization) (p.948).

3. Methodology

A conceptual analysis is a method that aims to understand concepts through an exact process (Wilson, 1969). It differs from a literature review in that a conceptual analysis is a non-empirical research method, focusing on an in-depth examination and understanding of one or more concepts, whereas a literature review compiles and evaluates existing literature in a particular research area (see e.g. Puusa, 2008, see also Salin & Koponen 2023). The objective of conceptual analysis is to identify, structure and analyse meanings of a concept (Walker and Avant, 1988; 1995) and sometimes also to propose a new concept definition (Näsi, 1983). Conceptual analysis helps to identify and define attributes of a concept and simultaneously, distinguishes the concept from related concepts (Wilson, 1969; Walker and Avant, 1992; Puusa, 2008). When there is a need to clarify the content and meaning of vague concepts that are nevertheless frequently in use, conceptual analysis is particularly relevant (Walker and Avant, 1992; Hupcey *et al.*, 1996). Thus, the aim of a conceptual analysis ranges from clarifying the meaning of the concept to developing an operational definition for the concept and distinguishing between the ordinary and scientific use of language when speaking of the concept (Wilson, 1969; Nunnally, 1978; Näsi, 1983; Walker and Avant, 1988; 1992). Another contribution of conceptual analysis is promoting a shared understanding of the concept among scholars (Kakkuri-Knuuttila, 1998).

Several literature review and meta-analysis type publications (e.g. Vanhove *et al.,* 2016; Hartmann *et al.,* 2020; Raetze *et al.,* 2021) have brought together key issues on individual-level resilience in organizations. However, in our view, they do not provide a full picture and congruent understanding of the characteristics of individual resilience in organizations in the specific business context and, as discussed in the introduction, Rodgers (2000) points out that the context of the conceptual analysis research matters for the use and understanding of the concept. Thus, in the present study, we aim to identify and clarify characteristics of individual resilience in organizations in the business context.

We complement the conceptual analysis with a bibliometric analysis (in section 5. i.e. descriptive information) conducted using Bibliometrix (2023) – a comprehensive scientific mapping tool for bibliometric analysis (Aria and Cuccurullo, 2017). Bibliometric analysis employs a quantitative research approach to analyse, examine, and visualize the research that exists on a specific theme, and it includes several submetrics that describe the intellectual structure relating to the research theme (Small, 1973; White and Griffith, 1981). In their study, Zupic and Čater (2015) proposed a standard workflow for bibliometric analyses, consisting of five distinct phases: 1) study design, 2) data collection, 3) data analysis, 4) data visualization and 5) interpretation. Aria and Cuccurullo (2017) highlight that bibliometric analysis is performed at a specific point in time to present a static picture of the research that exists at the moment. Consequently, we consider this can support the conceptual analysis. Bibliometric methods and analyses are growing in popularity, and these methods are increasingly used with the aim of uncovering the structure and dynamics of an area under study (Ellegaard and Wallin, 2015; Singh *et al*., 2020).

In the analysis of the results, alongside the conceptual analysis methodology (Wilson, 1969; Walker and Avant, 1992; Puusa, 2008), we also utilize theory-driven qualitative content analysis (e.g., Graneheim & Lundman 2004; Schwartz & Ungar, 2015) and researcher triangulation (Merriam & Tisdell, 2015; Puusa & Julkunen 2020) as part of the categorization process of the results. We will further elaborate on this in the results chapter.

4. Data collection and research process

In collecting the data for the present study, we systematically searched Scopus which is the largest scholarly database of peer-reviewed scientific publications that can thus provide and cover more perspectives, subjects and topics than offered by other databases (Mahmood and Shah, 2016; Md Khudzari *et al*., 2018; Vijayakumar *et al*., 2018). Additionally, we searched other search engines, e.g. Business Source Complete (EBSCO), ProQuest (ABI/INFORM), and Web of Science, but since the results of these did not differ significantly from those of Scopus, and since there were other reasons for choosing Scopus as mentioned above, we finally settled on Scopus. We performed our search in Scopus (3/2022) and the keyword resilience initially resulted with altogether 139,570 scientific articles. With our focal interest being in individual resilience in organizations in the business context, we further performed a search using a set of keywords including “individual AND resilience AND organization OR organizational AND individual AND resilience” (Figure 1). Scopus provided a ready-made filtering category for business, management, and accounting, which we utilized. Also, we felt that by doing so, we achieved the best available opportunity to focus our research on the business context. We limited our search to titles, abstracts, and keywords, due to the fact that we first wanted to make sure that the articles were about resilience as their main topic. Only after this "pre-screening" did we check the main body of the articles. Such a methodology has been used in concept analyses (e.g. Salin & Koponen 2023).

This search (title, abstract, keywords) resulted in 249 studies (articles) published in English in the fields of business, management, and accounting, where we limited our search in Scopus. These choices (electronic filtering criteria provided by Scopus) comprise our inclusion criteria (Cooper *et al.*, 2020). The exclusion criteria (applying Cooper *et al.*, 2020) included articles that, based on the title and the abstract, 1) did not focus on resilience at all as a research topic and/or did not address resilience at the individual level at all, 2) clearly belonged to a context / scientific discipline other than business, management and accounting or 3) the context was something other than an organizational context. Articles dealing with resilience only at the organizational level were excluded, but articles where the organizational level was dominant, but where the individual level was also an important element, were included. In some cases, the title and the abstract did not indicate the suitability of the article, in which cases the full-text article was used to confirm the suitability. As a result of this systematic procedure (Figure 1), the article was included in the analysis when the criteria were met. These steps resulted altogether in 97 articles (Appendix A) being included in the conceptual analysis.

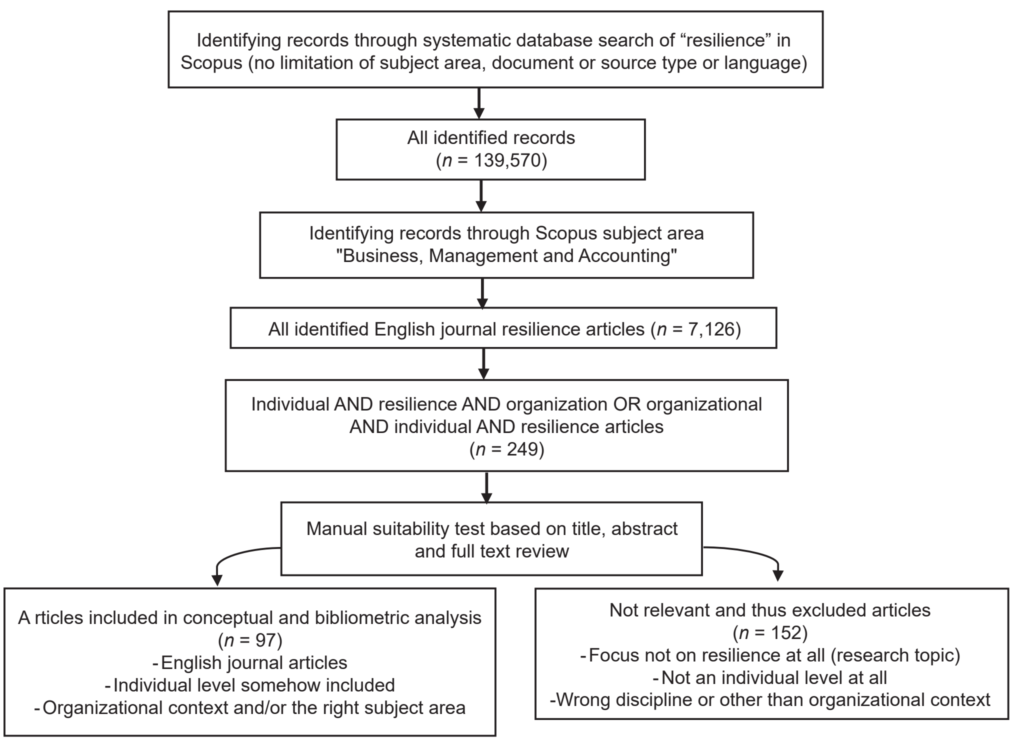

Figure 1. The search and pruning process

5. Descriptive information using a bibliometric analysis

To better understand the included studies, we first describe the characteristics of our sample (n = 97 journal articles) using a bibliometric approach. The studies were published between 1990 and 2022 in altogether 70 different journals and by 288 different authors. On average, the articles received 44.91 citations with each article being cited 6.1 times per year. The majority of the studies (87%) were published in high-impact journals, as ranked by the Academic Journal Guide (2021). Figure 2 illustrates the journals which have published more than two studies on individual resilience in organizations in the business context.

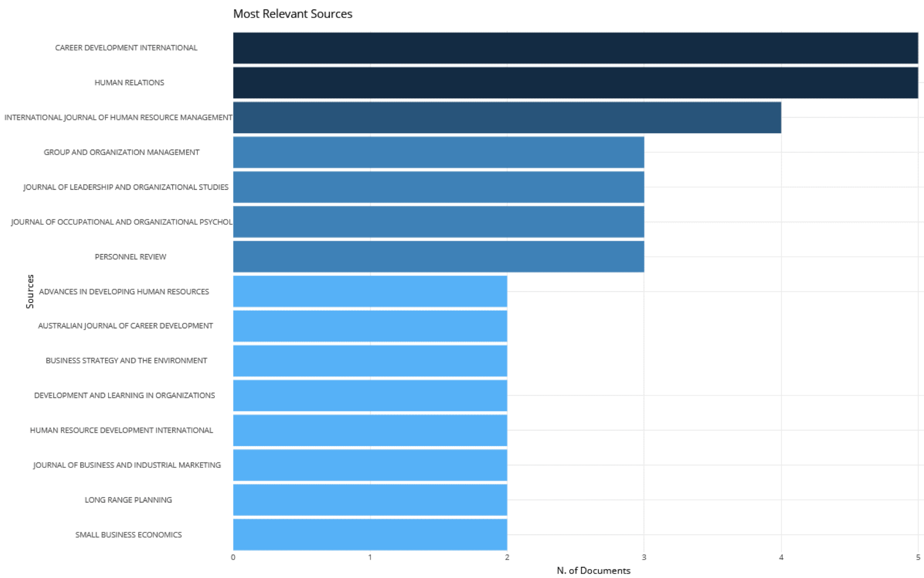

Figure 2. Top 15 journals publishing on individual resilience in organizations in the business context

Figure 3 illustrates that the first studies on individual resilience in an organizational context were published already in 1990. However, during the two decades that followed, only a number of studies focused on this topic, while individual resilience in organizations in the business context started to attract increasing research interest around 2010.

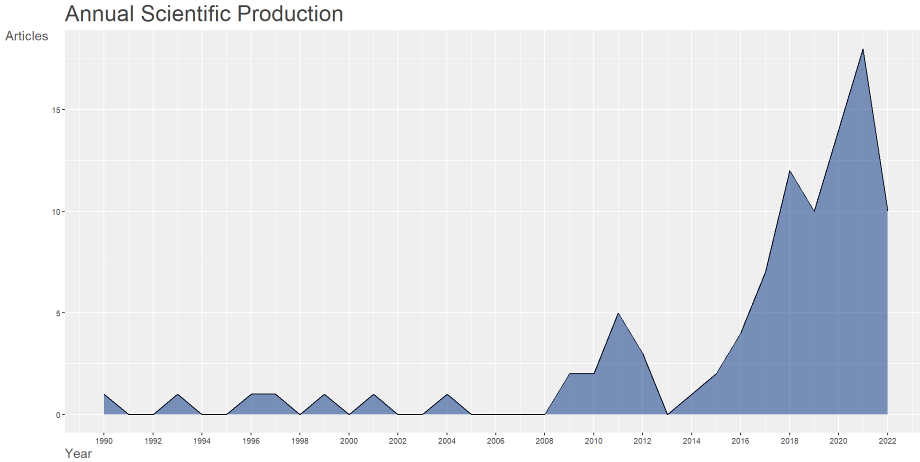

Figure 3. Annual Scientific Production

Figure 4 shows a co-occurrence network of words and themes that commonly occur with the concept of resilience. The co-occurrence network shows a mutual relatedness of terms according to their paired presence in the literature. In a co-occurrence network, each node represents a concept and each link depicts the co-occurrence of a pair of words while different colours illustrate different thematic areas. It seems that individual resilience in organizations in the business context is associated mostly with the word 'employee' and also to 'Psychological Capital' (red), 'organizational' (blue) and 'HRM' (green) related words. Moreover, there appear to be many workplace-related words (purple) that individual resilience in organizations in the business context has connections with.

Figure 4. Connection Map

As can be perceived from the Country Collaboration Map below (Figure 5), the studies are by far the most concentrated in Western industrialized countries. With regard to countries, we find that research on individual resilience in organizations in the business context comes from all continents. Figure 5 depicts the distribution of articles by country with the largest number of studies being from authors from the United States of America, Canada, the United Kingdom and Australia.

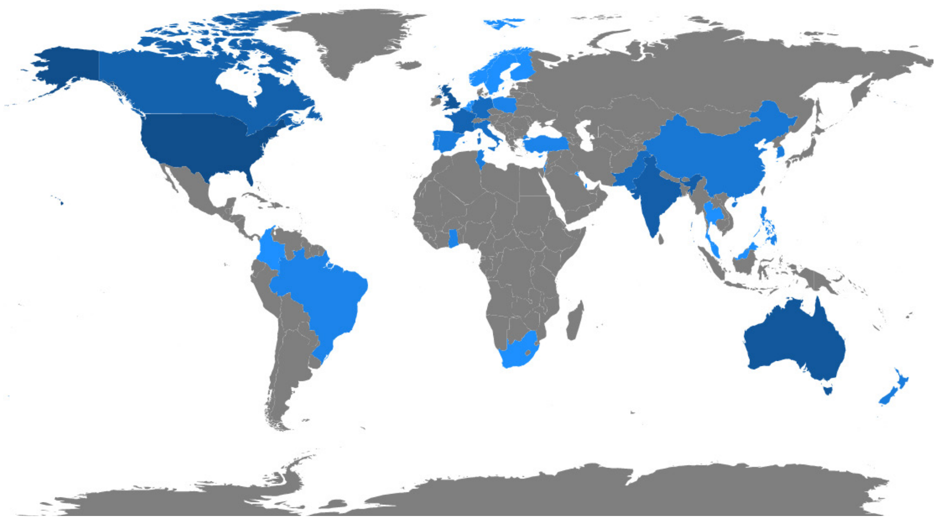

Figure 5. Country Collaboration Map

6. Results

6.1. Multiple definitions of individual resilience in organizations in the business context

Our data structure process (applying Gioia *et al*., 2013) reveals that the literature approaches individual resilience in organizations in the business context from four alternative viewpoints, including resilience as a state, an outcome, a trait and a process. This categorization had already been identified in our data, for example, by Moreno *et al.* (2019 [originally Pangallo *et al.,* 2015]). Since we also observed this classification in our own structuring process, we deemed it justified to adopt it as our approach.

We conducted our data structuring process by compiling all the resilience definitions by article into a Word file, which we categorized using a combination of theory-driven qualitative content analysis (applying e.g. Graneheim & Lundman, 2004), conceptual analysis methodology (Wilson, 1969; Walker and Avant, 1992; Puusa, 2008) and Gioia-methodology (Gioia *et al.,* 2013). Moreover, we used researcher triangulation (e.g. Merriam & Tisdell, 2015; Puusa & Julkunen 2020, 200) to find references in the resilience definitions for each article as to whether the article belonged to the state, outcome, trait or process categories according to our interpretation. This meant discussing matters on Teams or in email meetings. This proved to be a highly challenging task right from the beginning, as only a few articles could be unequivocally assigned to just one category. In other words, the majority of articles addressed resilience through more than one of these categories (state, outcome, trait, and process). Additionally, only in a few articles was a new and unique definition formed. In Table I, we present a few definition examples from each category, in the spirit of analysis transparency and reader-friendliness. Appendix A shows all the research articles and, in context, the categories to which we interpreted their resilience definitions to belong. As noted, there could be multiple definitions in one article, and in some cases, we saw the only option to link the article to multiple categories. The categorization was made according to the perspectives that were discussed in the article and/or the perspective or perspectives that were perceived to be relied upon. The outcome perspective was the most common (67) and the process perspective was the least common (41). The State perspective (54) was the second least common and the Trait perspective (61) was the second most common perspective.

The data included a wide range of types of articles (see Appendix A); empirical (qualitative [22] / quantitative [56]), conceptual (somehow linked to creating a new or development of an existing concept [8]), literature review (20), meta-analysis (a literature review, including the use of an appropriate statistical analysis method [2]), theoretical (focused on developing a theoretical perspective, but was not directly or explicitly linked to the other paper types mentioned [6]) or a combination of these (see Appendix A). We found this diversity of paper types to be an enriching and reliable feature of the data.

In structuring the data, we applied the Gioia method (e.g. Gioia *et al.*, 2013) (Table I). We implemented our structuring process practically by interpreting the definitions of resilience in articles. If we interpreted that the definitions in an article supported the perspective of resilience as returning to a normal state, the article was categorized under the "state" category. If it was interpretable that the emphasis of the definitions of resilience in an article lay on the role of favorable outcomes, the article with its definitions ended up in the "outcome" category. If, on the other hand, the article emphasized the view of resilience as a trait-like ability, characteristic, capacity, etc., the article was classified under the "trait" category. Conversely, if the article predominantly emphasized the perspective of resilience as a developing process influenced by different factors, it was categorized under the "process" category along with its definitions.

Table I. The data structure and some examples of the analysing process of the perspectives “state”, “outcome”, “trait”, and “process”

<table>
<tr><th>EXAMPLES OF THE AUTHORS</th><th>EXAMPLES OF AUTHENTIC CITATIONS (BELOW ALSO EXAMPLES OF 1ST ORDER CONCEPTS)</th><th>EXAMPLES OF 2ND ORDER THEMES (BOLDED) AND JUSTIFICATION INFORMATION OF THEM</th><th>AGGREGATE DIMENSIONS (CATEGORIES)</th></tr>
<tr><td>Malik, (2022); Srivastava & Madan, (2020); Varshney, (2022)</td><td>Srivastava & Madan (2020):

“capacity to ‘bounce back’ [to normal state] from adversity enables employees to survive unfavourable events” (p.44)

– normal state
– bouncing back
– PsyCap-citation</td><td>In quotes like this, as we interpreted it, the central idea of resilience was a “normal” state of returning to after adverse situations or events

If an article’s definition of resilience was based on the PsyCap definition, it was always categorised as at least ‘state’ and ‘outcome’</td><td>State

(54 articles relied either fully or partly on this perspective)</td></tr>
<tr><td>Luthans et al., (2004); Moenkemeyer et al., (2012); Duerden et al., (2018); Tonkin et al., (2018); Fandiño et al., (2019); Hanson and Keplinger, (2021).</td><td>Luthans et al., (2004):
“capacity to ´bounce back´ from adversity or even dramatic positive changes is particularly relevant in today’s turbulent business environment” (p.47)

Fandiño et al. (2019):
“how individuals can bounce back from adverse situations and achieve good outcomes” (p. 137)

– trajectory-based descriptions
– a good outcome after an adverse event</td><td>In quotes like these, as we interpreted it, the central idea of resilience is some favourable outcome

If an article’s definition of resilience was based on the PsyCap definition, it was always categorised as at least ‘state’ and ‘outcome’</td><td>Outcome

(67 articles relied either fully or partly on this perspective)</td></tr>
<tr><td>Noe et al., (1990);
London (1993);
Krisor et al., (2015);
Raetze et al., (2021);
Steen and Pollock, (2022)</td><td>London, (1993):
“resilience is the ability to adapt to changing circumstances” (p. 55)

Krisor et al. (2015):
“resilience as mental resistance and therefore, on its trait aspect – [which] is characterized by effective adaptive behavior in challenging situations and the ability to recover successfully after stressful situations” (p. 651)

– cumulative and/or developable individual or collective trait-like ability
– capacity
– characteristic
– resource, or
– capability or
– a set of skills and attributes</td><td>In quotes like these, as we interpreted it, the central idea of resilience was a trait already existing and/or developing in the person, or a pattern of behaviour, for example</td><td>Trait

(61 articles relied either fully or partly on this perspective)</td></tr>
</table>

Abu-Tineh, (2011); Flynn *et al.*, (2021); Hanson and Keplinger, (2021); Flynn *et al.*, (2021); Mokline and Ben Abdallah, (2021); Dhoopar *et al.*, (2022)	Flynn *et al.*, (2021): *"when conceptualized as a dynamic process, resilience is inferred from patterns of responses to adverse circumstances or events; in the dynamic view, resilience may be captured by a multilevel model of within-individual response trajectories over time."* (p. 693) – resilience is formed over time – it is influenced by many factors (family, organization, etc.)	In quotes like these, as we interpreted it, **the central idea of resilience was process-oriented; resilience was not seen as bound to a particular state or as emphasizing only some certain outcome(s) but as a dynamic phenomenon with a temporal dimension, interactivity and evolvability**	**Process** (41 articles relied either fully or partly on this perspective)

We open Table I and our interpretations below. Overall, many of the research articles referred to the Psychological Capital's state-like perspective of resilience either directly or by seeing "bouncing back" to a normal state after adversity as one of the most important characteristics of resilience (e.g. Luthans *et al*., 2007; Malik, 2022; Varshney, 2022). Kuntz *et al*., (2017) rightly note that: "*bouncing back typically characterizes individual resilience*" (p. 421). Such a return to "normality" at the individual level can be seen as a very important aspect of turbulent organizational life in the business context, even for organizations.

Fandiño et al., (2019) define resilience as *"how individuals can bounce back from adverse situations and achieve good outcomes"* (p. 137). In many other articles, and in their definitions of resilience, this outcome-basedness is considered a key element of resilience (Moenkemeyer *et al*., 2012; Duerden *et al*., 2018; Tonkin *et al*., 2018; Hanson and Keplinger, 2021). In this context, outcome-basedness refers to a perspective that emphasizes the positive outcomes of resilience, such as growth, success, and survival. Bouncing back is one of the outcomes, and consequently, the Psychological Capital perspective also falls into this category as to how we understand it; the Psychological Capital perspective combines state and outcome perspectives. Hodges (2017) states that people who are resilient, believe that change brings positive outcomes, which can be interpreted as indicating a positive attitude towards change and a potential commitment to change in resilient people. Moreover, Meintjes and Hofmeyr (2018) point out that resilience can be seen to be associated with positive organizational outcomes, such as engagement, and that resilient employees are required in organizations, for example, because of their ability to constructively respond and succeed and even grow in the face of chaos, uncertainty and constant change. In this context, many articles see the potential for growth or to respond productively after adversity, stress or change as related to resilience (Petersen and Youssef-Morgan, 2018; Turner et al., 2020; Hanson and Keplinger, 2021). In our opinion, in a turbulent and ever-changing business environment (see e.g. Accenture 2018), individual-level growth and the favourable and beneficial outcomes that go with it are also very important for organizations.

London (1993) defines resilience as follows: "*resilience is the ability to adapt to changing circumstances*" (p. 55), while Krisor *et al.* (2015) consider "*resilience as mental resistance and therefore, on its trait aspect –* [which] *is characterized by effective adaptive behavior in challenging situations and the ability to recover successfully after stressful situations*" (p. 651). In addition, in many other research articles, the emphasis on resilience definitions is placed on the view that resilience is at least partly a cumulative and/or developable individual or collective trait-like ability, capacity, characteristic, resource, or capability or a set of skills and attributes that can be enhanced and which are beneficial in facing e.g. significant adversities, setbacks, challenges or changes or negative work situations and overcoming and adapting to them (Noe *et al.*, 1990; Raetze *et al.*, 2021; Steen and Pollock, 2022). In our point of view, such trait-related abilities, resources and skills of individuals are also needed to help organizations survive in increasingly complex business environments.

In their st udy, Flynn *et al.* (2021) conceptualize resilience as "*a dynamic process*" (p. 693) and see, among some others, dynamic elements (i.e. processual, active, developing, etc.) in resilience (Abu-Tineh 2011; Hanson and Keplinger 2021; Flynn *et al.*, 2021; Dhoopar *et al.*, 2022). We found this process perspective of resilience to be particularly popular in more recent studies. Furthermore, Flynn *et al.* (2021) add the following: "*when conceptualized as a dynamic process, resilience is inferred from patterns of responses to adverse circumstances or events; in the dynamic view, resilience may be captured by a multilevel model of within-individual response trajectories over time*." (p. 693). Mokline and Ben Abdallah (2021) note that the process perspective understands that resilience is formed over time and is influenced by factors such as family and other social environments (e.g. community). In this dynamic process, Kuntz *et al.* (2017) emphasize that it is important that the organization provides resources that enable the employee to cope, thrive, adapt and be supported in the face of adversity. To see resilience from the perspective of individuals as a process can support organizations in many ways. The workplaces have evolved, for example, with the advent of multitasking, to a point where individual resilience is increasingly needed in everyday situations. Recognizing temporal development (and the opportunity for development) and understanding the need for support (which is evident from a process perspective) are, in our view, crucially important in the context of organizations striving for optimal surviving.

6.2. Other special characteristics of individual resilience in organizations in the business context

According to Partouche-Sebban et al. (2021), resilience can be expressed simultaneously in an organizational context at both an individual and organizational level (cf. collective intangible capital), thus revealing the collective nature of individual resilience in an organizational context: "*dynamic combination of members' resilience characteristics helps an organization to increase its capacity to face difficulties*" (p. 4). Steen and Pollock (2022) emphasize the collective resilience-based approach by noting that; "*in a resilience-based approach, the emphasis is on making sense of ongoing changes and updating the risk picture collaboratively to address uncertainties*" (p. 6). In their study, Bridges et al. (2021) note that "*resilience is a suite of learned behaviors where, through a range of organizational supports, employees can build skills such as the ability to be adaptive, to seek networking, to professionally develop and grow*" (p. 2). According to Hodges (2017), asking for support is an important characteristic of resilient people. Job and career satisfaction are interrelated to resilience as Smith et al. (2020) perceive resilience as "*a coping strategy for enhancing job satisfaction*" (p. 483), while Srivastava and Madan (2020) state that: "*from the career perspective, employees can be considered resilient when they manage adverse work situations and generate higher career satisfaction*" (p. 44).

In recent research resilience is not perceived as "*inborn*" (Lyons *et al.*, 2015, 365; Mokline and Ben Abdallah, 2021), thus, resilience is not "*something that people are born with*" (Sahni *et al.*, 2021, 40) but rather "*it can be developed*" (p. 40) and strengthened through life-long (Fandiño *et al.*, 2019) interventions (Lyons *et al.*, 2015). Resilience is fairly common, arising from ordinary human adaptive processes and it can be seen as the opposite of psychological vulnerability, although not implying complete invulnerability (Lyons *et al*., 2015). Moreover, it is noteworthy that higher resilience does not necessarily predict higher job performance (Meneghel *et al*., 2016).

There are conflicting views among researchers as to whether resilience is an every day or an extreme phenomenon. Many scholars agree that resilience only becomes apparent in the face of significantly difficult, extreme or severe life events, threats, risks, adversity or change (West *et al*., 2009; Tonkin *et al*., 2018; Bardoel and Drago, 2021; Dhoopar *et al*., 2022). For example, Bardoel and Drago (2021) define resilience as "*positive response to a significant adverse event, where a ´significant adverse event´ is defined as having expected or actual significant resource losses*" (p. 662). In other words, the majority of the data does not perceive resilience as being evident in everyday working life before e.g. a major adversity, change or difficult situation. However, e.g. Branicki *et al*. (2019) point out that resilience can be either an ´everyday´ or an extreme phenomenon (p. 1264). Furthermore, Luthans *et al*. (2004) highlight Masten's (2001) classical idea of resilience as an ordinary "magic", which refers to a view of resilience perceived as an everyday phenomenon. Kuntz *et al*. (2017) note that (employee) resilience: "*comprises adaptive, proactive, support-seeking, learning, and crisis management behaviours that can be continually developed and enacted in everyday practice*" (p. 421).

In addition, as many scholars point out, resilience seems to be an interactive concept of social reality that includes behaviours, outlooks, thoughts, meanings, feelings, shared sensemaking, and other actions that can be learned and developed (Hind *et al*., 1996; Abu-Tineh, 2011; Tonkin *et al*., 2018; Teng-Calleja *et al*., 2020; Malik, 2022). In everyday organizational life, the importance and interactive nature of resilience is also reflected by Ojansivu & Hermes (2021) in that they link meanings and communication as important sources of resilience in business relationships. Furthermore, Duerden *et al*. (2018) propose that: "*feelings of personal expressiveness via participation in LAW (leisure-at-work) will result in greater employee resilience*" (p. 642) and that "*resilience is a fundamental, primary outcome of recreation*" (p. 642). The ability to improvise, be creative, innovative or see alternative perspectives was also mentioned as an important part of resilience (Hind *et al*., 1996; Vickers and Kouzmin, 2001; Meneghel *et al.,* 2016; Farrukh *et al.,* 2021). Farrukh *et al*. (2021) note that resilient individuals "*use creative exploration in facing challenging circumstances*" (p. 796) and are "*self-motivated to display innovative work behaviors*" (p. 796).

Altogether, researchers do not share a consensus about whether resilience arises before, during, or after an unpleasant situation or adversity. This is reflected, for example, in the interpretation of resilience as preparing (Hanson and Keplinger, 2021), responding (e.g. flexibility, agility) (Santoro *et al*., 2020) or covering both "*preparing and responding*" (Turner *et al*., 2020, 2). Sharma and Sharma (2020) combine perspectives and simplify the issue heuristically: "*for resilience to be demonstrated, both adversity and positive adaptation must be evident*" (p. 290).

Only a few studies comprised a self-made definition of resilience. Instead, studies mainly referred to existing definitions of resilience, often even several overlapping definitions (Raetze *et al*., 2021; Dhoopar *et al*., 2022). Therefore, it is not surprising that it has been seen that there is a risk that resilience becomes a "*quicksand term*" (Britt *et al*., 2016, 379).

6.3. Antecedents and consequences of individual resilience in organizations in the business context

As can be seen from Figure 3, the research interest in resilience has significantly increased in recent times. Britt *et al*., (2016) note that "*with the growth of interest in resilience has come confusion regarding the conceptualization of resilience, as well as distinctions between the assessment and the antecedents of resilience*" (p. 379). We argue that in organizations, it is possible not only to become better aware of the characteristics of individual resilience and the conditions for its organizational support and facilitation but also to strengthen them, by understanding the antecedents and consequences of the phenomenon. We also argue that the antecedents for individual resilience in organization in the business context are not only everyday and significant negative events and experiences and individual-related factors (traits, resources, etc.), but also reflections from the social environment, by which we mean for example family and community (Mokline and Ben Abdallah 2021; Tonkin *et al*., 2018).

According to Puusa (2008), antecedents cannot be both features and antecedents of a concept concurrently. Antecedents refer to events or coincidences that must occur before the concept can occur while consequences occur as a result of the occurrence of the concept. In the context of the consequences of resilience, the research articles use terminology such as coping, survival, personal development, enduring workplace pressures, empowerment from survival, improving job and career satisfaction, productivity, retention and performance. We interpret them as enduring, growth and learning (Table II) because in our opinion these summarize the terminology used in research articles. Based on research articles, we interpret that resilience can be neutrally bouncing back to a normal state or bouncing back with positive aspects (Table II). Based on the data, we conclude the antecedents and consequences of individual resilience in organizations in the business context as follows (Table II):

Table II. The antecedents and the consequences of individual resilience in organizations in the business context

ANTECEDENTS OF INDIVIDUAL RESILIENCE IN ORGANIZATIONS IN THE BUSINESS CONTEXT	CONSEQUENCES OF INDIVIDUAL RESILIENCE IN ORGANIZATIONS IN THE BUSINESS CONTEXT
• Sufficient or significant negative experiences, adversity, change, challenge, disruption, challenging situations, threats • Stressful and unusual everyday situations • Reflections on unusual negative, difficult or unpleasant events in the social environment • Personality traits, personal resources, capacities, capabilities, attitudes, positive outlook and behaviour, self-control, ability to improvize, creativeness	• Bouncing back • Bouncing back and positive adaptation • Well-being, maintaining positive functioning, performance and outcomes • Flexibility and agility in change and uncertainty • Enduring, growth and learning • Potentially strengthens employees´ commitment to change

In practice, we conducted the analysis using a combination of theory-driven qualitative content analysis (applying e.g. Graneheim & Lundman, 2004) and conceptual analysis (Wilson, 1969; Walker and Avant, 1992; Puusa, 2008). Moreover, we used researcher triangulation (e.g. Merriam & Tisdell, 2015; Puusa & Julkunen 2020, 200) to find and interpret article by article what kinds of antecedents and consequences are associated with individual resilience in organizations in the business context. We discussed our findings on Teams or in email meetings, and based on these discussions, the principal investigator made decisions.

7. Conclusions and discussion

7.1. Theoretical contribution

The present study contributes to the literature by highlighting the importance of individual resilience in an organizational context, seen as both an every day and an extreme phenomenon, and thus complements existing theoretical knowledge. Additionally, the contribution of our article relates to answering those strong calls presented in the literature regarding the conceptual development of individual-level resilience in an organizational context (Britt *et al*., 2016; King *et al*., 2016; Raetze *et al.,* 2021). Furthermore, our article clarifies the depiction of individual resilience as a phenomenon within organizations and thereby enhances understanding (and the usability) of this highly important human intangible asset, particularly in organizations in the business context (see e.g. Savolainen *et al.,* 2019, see also Giorgi *et al.,* 2017; Accenture 2018; Giustiniano *et al.,* 2020). As retrieved from Hartmann *et al.* (2020, 948): "*future research might seek to understand the impact of individual and team resilience on the development of resilience at the organisational level*". Related to that, we see that by increasing understanding about the antecedents and consequences of resilience and by revealing the nature of resilience in other ways, and thereby helping to develop support mechanisms for resilience, for example, our article makes a practical contribution to organizational life.

Although this is a business and management study, some of our sources were very much in the psychological field. Human beings are holistic beings, so we do not really have a separate self and work self and therefore the use of understanding the individual through knowledge gained in the field of psychology is relevant here.

Primarily, the present study aimed to reveal the structure and dynamics of resilience and the studies around it through a conceptual analysis complemented by a bibliometric analysis (Ellegaard and Wallin, 2015; Singh *et al*., 2020), and to clarify the content and meaning of resilience which as a concept is vague but nevertheless frequently in use (Walker and Avant, 1992, see also Hupcey *et al*., 1996). We contribute to the literature by forming a more coherent view of individual resilience in organizations in the business context. In the data, the diversity of definitions highlights the fragmented and incoherent nature of the current understanding of resilience as a concept and there exists no definition that reflects all the various perspectives presented by scholars. Moreover, the existing definitions alone do not adequately reflect today's organizational environment in the business context, with new situations and working methods involving stress and balancing, such as multitasking, but which do not directly involve significant adversities (see e.g. Giorgi *et al.,* 2017; Accenture 2018). Organizational and environmental support is important for individual resilience, and since much of the day is spent at work, the role of organizational support is huge and at the same time both resilience and support are everyday phenomena. Additionally, individuals bring unpleasant aspects of their social environment (such as family conflicts, social anxieties, etc.) into the workplace, because it is impossible to completely exclude them. However, most of the definitions in the data focus on describing resilience as a phenomenon that only emerges through significant adversity. In our view, the manifestation of resilience in organizational life and in the business context does not always require significant adversity. Consequently, we contribute to the current literature and consider resilience as being activated also in today´s everyday work situations that require adaptation, coping, balancing or flexibility. In other words, a significant contribution of our article is the emphasized portrayal of the everyday nature of individual-level resilience, which surpasses many previous studies. In one of the few previous studies that support our view, Stokes *et al*. (2019) suggest that resilience should be seen more as an every day (rather than exceptional) phenomenon among HRM practices and managers in organizations. We perceive this as particularly important in organizations in the business context where turbulence is a particularly topical issue, for example, due to fierce competition and market volatility. The ability of individuals to adapt to change and to turbulent situations is key to both organizational effectiveness and individual well-being. On the other hand, there are sometimes major upheavals in the environment, such as the COVID-19 pandemic, which has a strong impact on organizations and the employees who work within them. Preparing for these upheavals and also for major disasters, by strengthening both individual and, through this, organizational resilience, is also important for both individuals and organizations, and in this, organizations play a significant role (Daellenbach *et al*., 2018).

Individual resilience in organizations in the business context is influenced by a number of factors related to the personality, abilities, and, for example, resources of individuals (trait- or state-like resilience). Additionally, as many scholars point out, resilience is not just a personal characteristic, trait or attitude but rather an interactive concept (i.e. interactive with other individuals, environment and the organization) and phenomenon of social reality, which involves behaviours, outlooks, thoughts, meanings, feelings, shared sensemaking, and other actions that can be learned and developed and, because of those defining attributes, among other things, resilience has an important role in organizational life (Hind *et al*., 1996; Abu-Tineh, 2011; Tonkin *et al*., 2018; Teng-Calleja *et al*., 2020; Malik, 2022). Thus, individual resilience clearly also has many social impacts. Furthermore, the importance of environmental and organizational support to individual-level resilience was highlighted by many scholars (Hind *et al*., 1996; Rees and Rumbles, 2012; Tonkin *et al.,* 2018; Bridges *et al*., 2021; Bilgetürk and Baykal, 2021). For example, Tonkin *et al*., (2018) note that resilience; "*may be enhanced by the presence of resources and support in an occupational context*" (p. 109).

Based on the results, the view of resilience as a positive phenomenon of social reality seems to be coherent. All the findings, with different emphases, point to resilience as a phenomenon that is seen as positive in organizational life, with different positive effects. In all findings, resilience appears to be highly beneficial for individuals, while none of the findings suggest that individual resilience is not beneficial to organizations. In addition, we interpret resilience as learning (Table II), because resilience can also be strengthened experientially through survival experiences. We further interpret that resilience can be neutrally bouncing back to a normal state or bouncing back with positive aspects (Table II). Consequently, resilience can even be bouncing forward (Siambabala *et al*., 2011).

However, the results show that views on individual resilience in organizations in the business context are divided on many levels. Ontologically, there is a division of perspectives of understanding resilience as a state, process, trait and outcome (Moreno *et al*., 2019 [originally Pangallo *et al.,* 2015]), which, according to our results, we suggest is an illustrative ontological summarization of individual resilience in organizations in the business context. This division naturally affects whether resilience is understood as dynamic, or as something that does not change, as something that can be learned, or as something that cannot be learned, and as an evolving or stagnant state. Chronologically, there seems to be a trend in resilience research as moving more and more from a stable trait perspective to a process perspective and, on the other hand, to understand individual resilience and the associated bouncing back to a normal state after adversity or even forward (growth) as a useful outcome for the organizations (state- and outcome- perspectives).

In relation to the manifestation of resilience over time in the face of adversity, views are divided among the periods before, during and after. However, some scholars saw resilience as occurring both before, during *and* after adversity, which suggests that resilience is useful before, during and after an unpleasant event. Continuous support for individual resilience from the organizational level is vital. Apparently, seeing resilience from the process approach works best from the point of view of organizational support (Flynn *et al.*, 2021; Mokline and Ben Abdallah, 2021).

As an agenda for future studies, we propose in our model (Figure 6)that individual resilience in organizations in the business context is always interactive in nature with both the (social) environment (e.g. family, society) and the organization (the environment and the organization can be both the cause and the support), and it may occur before, during or after unusual or challenging everyday situations or significant adversity, stress, change, threat or trauma. Furthermore, it can occur at least as a state-, process-, trait- or outcome-based phenomenon of social reality, while always including the idea of coping, balancing, flexing or adapting, and also bouncing back or even forward. The model (Figure 6) can be seen as a contribution to the present study, and, it can also serve as an agenda or rather as a reference framework for future studies. Our model is loosely and partially based on models made by Moreno *et al.* (2019) and Tonkin *et al.* (2018). With the model, we aim to clarify the perception of both the critical elements of individual resilience in organizations in the business context and the factors that influence it.

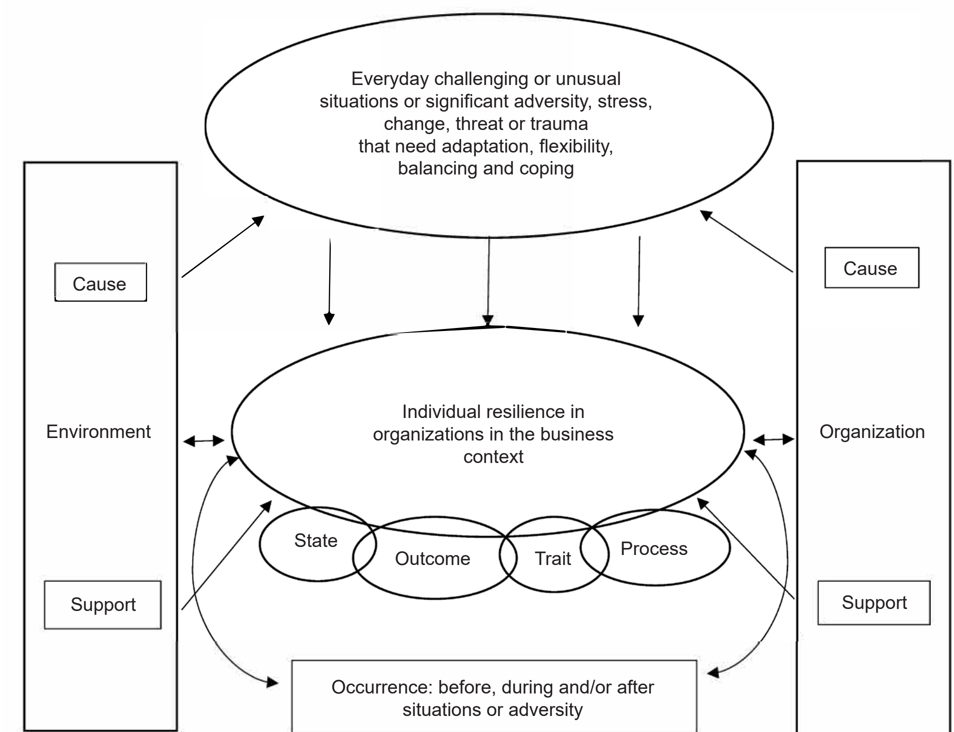

Figure 6. Individual resilience in organizations in the business context

7.2. Managerial implications

In managing organizations, it is important to take into account that resilience is both an individual and a collective phenomenon. Humanity-related issues such as support, interaction and emotional skills (e.g. Koponen *et al.,* 2022), which are also linked to resilience, are playing an increasingly important role in organizational leadership. In addition, in management, individual differences in resilience must be taken into account. For example, depending on personality, experience, etc. change can be stressful in different ways for different people. For this reason, management must also adapt its own actions to different people in different ways in change situations so that they can provide the best possible support to those they lead. Moreover, sufficient support must be available for managers themselves. Thus, it is very important that managers invest in adequate support arrangements at the organizational level, related to supporting workers' resilience in everyday work life. Such support arrangements could include, for example, recognizing and utilizing employees' strengths, sufficient individualized listening through, for instance, supervisor work, consciously building and supporting a culture of encouraging feedback and enabling open discussion culture and appropriate encounters through various technological applications.

Furthermore, as well as individual resilience in organizations in the business context, the vulnerability of every member of the work community must be understood as an everyday and complex phenomenon. Consequently, anyone can experience vulnerabilities, and when faced with them, a resilience-related and strength-based approach together with a multiple-actor network to provide support plays an important role (Johns and Davey 2021). Finally, we believe that in a managerial and organizational context, it would be very important to capitalize on the collective nature (Srour *et al.*, 2021) of resilience and ask the question "does it stick?". This seems to happen, for example, through shared experiences of coping with challenging situations and learning by example (survival and growth-based stories, etc.) (West *et al.*, 2009; Moenkemeyer *et al.*, 2012). This, of course, gives a new perspective and adds relevance to issues such as managerial interaction and employee teamwork. In particular, in Scandinavia, where we are accustomed to valuing both data-driven leadership and leadership based on a humane view of individuals, gaining a better understanding of the connections of individual resilience in organizations in the business context, which our article provides, offers practical implications for supporting and improving leadership and organizational life. For example, understanding and accepting the support, multilevel nature, and manifestations required for individual resilience in organizations in the business context helps to create better support mechanisms for individual resilience. Furthermore, understanding the critical elements, antecedents, and consequences of resilience aids in developing models for resilience enhancement and recognizing the benefits of individual resilience, such as improved organizational performance and effectiveness. In fact, we argue that resilient individuals are often thriving, and thriving individuals, in turn, are efficient and perform well in their tasks, which has implications for organizational performance and efficiency.

7.3. Limitations and further research

As with all studies, our study has some limitations. First, our empirical setting comprised only articles from Scopus. Therefore, it could be useful to use also other search engines. Secondly, it is possible that the search string combination we used excluded some relevant articles. Thirdly, our research focuses on the Western context, so it would be useful to try to find different ways to include research data from, for example, developing countries in further studies. Moreover, we call for further longitudinal research on individual resilience in organizations in the business context, for example as an everyday phenomenon and in the context of increasing efficiency and changes and also in preparation for future turbulent conditions.

In our view, the data did not provide a fully exhaustive view of individual resilience in organizations in the business context and some very important aspects were missing. For example, it would be important for further research to investigate whether an emotion, knowledge, a lesson learned or similar can trigger resilience – also, more research should be done on those factors that influence resilience and, in general, on the ontology of resilience, including its temporal dimension. Furthermore, it would also be useful to consider the positive and negative dimensions of resilience and whether resilience can also be neutral in nature. In current definitions, resilience is always associated with positivity, for example in survival.

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Varshney, D. (2022). Machiavellianism, self-concept and resilience: Do they affect employee performance? A moderated-mediated analysis. *International Journal of Productivity and Performance Management* 72:7, 2093–2118.

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Appendix

Appendix A. Full list of the 97 research articles and our interpretation of the distribution of the articles' main emphasis on either state, outcome, trait or process viewpoint (or on more than one of them) and the paper types of the selected articles

ARTICLE	EMPHASIZED PERSPECTIVE ON RESILIENCE	PAPER TYPE
Abu-Tineh, A.M. (2011). Exploring the relationship between organizational learning and career resilience among faculty members at qatar university. *International Journal of Educational Management* 25:6, 635–650.	Process	Empirical / Quantitative paper
Ahmad, J., Athar, M. R., Azam, R. I., Hamstra, M. R. W., & Hanif, M. (2019). A resource perspective on abusive supervision and extra-role behaviors: The role of subordinates' psychological capital. *Journal of Leadership and Organizational Studies* 26:1, 73–86.	State, outcome	Empirical / Quantitative paper
Ahmad, S., Islam, T., Sohal, A. S., Wolfram Cox, J., & Kaleem, A. (2021). Managing bullying in the workplace: A model of servant leadership, employee resilience and proactive personality. *Personnel Review* 50:7, 1613–1631.	State, outcome	Conceptual paper
Al-Hawari, M. A., Bani-Melhem, S., & Quratulain, S. (2020). Do frontline employees cope effectively with abusive supervision and customer incivility? testing the effect of employee resilience. *Journal of Business and Psychology* 35:2, 223–240.	State, outcome, trait	Empirical / Quantitative paper
Anglin, A. H., Short, J. C., Drover, W., Stevenson, R. M., McKenny, A. F., & Allison, T. H. (2018). The power of positivity? the influence of positive psychological capital language on crowdfunding performance. *Journal of Business Venturing*, 33(4), 470–492. doi:10.1016/j.jbusvent.2018.03.003	State, outcome, trait	Empirical / Quantitative paper
Annor, F., & Amponsah-Tawiah, K. (2020). Relationship between workplace bullying and employees' subjective well-being: Does resilience make a difference? *Employee Responsibilities and Rights Journal* 32:3, 123–135.	Trait	Empirical / Quantitative paper
Anwar, A., Coviello, N., & Rouziou, M. (2021). Weathering a crisis: A multi-level analysis of resilience in young ventures. *Entrepreneurship: Theory and Practice* 47:3, 864–892.	Trait	Empirical / Quantitative paper
Avey, J. B., Nimnicht, J. L., & Graber Pigeon, N. (2010). Two field studies examining the association between positive psychological capital and employee performance. *Leadership & Organization Development Journal* 31:5, 384–401.	State, outcome	Empirical / Quantitative paper
Avey, J. B., Wernsing, T. S., & Mhatre, K. H. (2011). A longitudinal analysis of positive psychological constructs and emotions on stress, anxiety, and well-being. *Journal of Leadership and Organizational Studies* 18:2, 216–228.	State, outcome (trait)	Meta-analysis (/ Quantitative paper)
Bardoel, E. A., & Drago, R. (2021). Acceptance and strategic resilience: An application of conservation of resources theory. *Group and Organization Management* 46:4, 657–691.	Outcome, trait, process	Theoretical paper / literature review
Bernard, M. -., & Barbosa, S. D. (2016). Resilience and entrepreneurship: A dynamic and biographical approach to the entrepreneurial act. *Management (France)* 19:2, 89–23.	Trait, process	Empirical / Qualitative paper

Bilgetürk, M., & Baykal, E. (2021). How does perceived organizational support affect psychological capital? the mediating role of authentic leadership. *Organizacija* 54:1, 82–95.	State, outcome, process	Empirical / Quantitative paper
Borg, J., Borg, N., Scott-Young, C. M., & Naderpajouh, N. (2020). The work readiness–career resilience linkage: Implications for project talent management. *International Journal of Managing Projects in Business* 14:4, 917–935.	State	Literature review
Boudrias, J.-S., Desrumaux, P., Gaudreau, P., Nelson, K., Brunet, L., & Savoie, A. (2011). Modeling the experience of psychological health at work: The role of personal resources, social-organizational resources, and job demands. *International Journal of Stress Management* 18:4, 372–395.	State, outcome	Empirical / Quantitative paper
Branicki, L., Steyer, V., & Sullivan-Taylor, B. (2019). Why resilience managers aren't resilient, and what human resource management can do about it. *International Journal of Human Resource Management* 30:8, 1261–1286.	State, outcome, trait	Empirical / Qualitative paper
Bridges, D., Wulff, E., & Bamberry, L. (2021). Resilience for gender inclusion: Developing a model for women in male-dominated occupations. *Gender, Work and Organization* 30:1, 263–279.	Trait, process	Literature review / theoretical paper
Cham, B. S., Boeing, A. A., Wilson, M. D., Griffin, M. A., & Jorritsma, K. (2021). Endurance in extreme work environments. *Organizational Psychology Review* 11:4, 343–364.	State, outcome	Conceptual paper / literature review
Cho, I., Park, H., & Dahlgaard-Park, S. M. (2017). The impacts of organisational justice and psychological resilience on employee commitment to change in an M&A context. *Total Quality Management and Business Excellence* 28:9–10, 989–1002.	Outcome, trait	Empirical / Quantitative paper
Cooke, F. L., Cooper, B., Bartram, T., Wang, J., & Mei, H. (2019). Mapping the relationships between high-performance work systems, employee resilience and engagement: A study of the banking industry in china. *International Journal of Human Resource Management* 30:8, 1239–1260.	Trait	Empirical / Quantitative paper
Cooper, B., Wang, J., Bartram, T., & Cooke, F. L. (2019). Well-being-oriented human resource management practices and employee performance in the chinese banking sector: The role of social climate and resilience. *Human Resource Management* 58:1, 85–97.	State, outcome, trait, process	Empirical / Quantitative paper
Dhoopar, A., Sihag, P., Kumar, A., & Suhag, A. K. (2022). Organizational resilience and employee performance in COVID-19 pandemic: The mediating effect of emotional intelligence. *International Journal of Organizational Analysis* 30:1, 130–155.	Process	Empirical / Quantitative paper
DiBella, J., Forrest, N., Burch, S., Rao-Williams, J., Ninomiya, S. M., Hermelingmeier, V., & Chisholm, K. (2022). Exploring the potential of SMEs to build individual, organizational, and community resilience through sustainability-oriented business practices. *Business Strategy and the Environment* 32:1, 721–735.	State, outcome, process	Empirical / Qualitative paper

Duerden, M. D., Courtright, S. H., & Widmer, M. A. (2018). Why people play at work: A theoretical examination of leisure-at-work. *Leisure Sciences* 40:6, 634–648.	Outcome	Literature review (+ partly Conceptual paper)
Fandiño, A. M., Formiga, N. S., & de Menezes, R. M. (2019). Organizational social capital, resilience and innovation validation of a theoretical model for specialized workers. *Journal of Strategy and Management* 12:1, 137–152.	Outcome	Empirical / Quantitative paper
Farrukh, M., Ansari, N. Y., Raza, A., Meng, F., & Wang, H. (2022). High-performance work practices do much, but H.E.R.O does more: An empirical investigation of employees' innovative behavior from the hospitality industry. *European Journal of Innovation Management* 25:3, 791–812.	Trait	Empirical / Quantitative paper
Ferreira, A. I., Cardoso, C., & Braun, T. (2018). The mediating effects of ego-resilience in the relationship between organizational support and resistance to change. *Baltic Journal of Management* 13:1, 104–124.	Outcome, trait	Empirical / Quantitative paper
Flynn, P. J., Bliese, P. D., Korsgaard, M. A., & Cannon, C. (2021). Tracking the process of resilience: How emotional stability and experience influence exhaustion and commitment trajectories. *Group and Organization Management* 46:4, 692–736.	Process	Empirical / Quantitative paper
Gibson, C. B., Dunlop, P. D., & Raghav, S. (2021). Navigating identities in global work: Antecedents and consequences of intrapersonal identity conflict. *Human Relations* 74:4, 556–586.	Outcome, trait, process	Empirical / Qualitative / Quantitative paper
Grzeda, M. M. (1999). Re-conceptualizing career change: A career development perspective. *Career Development International* 4:6, 305–311.	Outcome, trait	Empirical / Quantitative paper
Gucciardi, D. F., Crane, M., Ntoumanis, N., Parker, S. K., Thøgersen-Ntoumani, C., Ducker, K. J., . . . Temby, P. (2018). The emergence of team resilience: A multilevel conceptual model of facilitating factors. *Journal of Occupational and Organizational Psychology* 91:4, 729–768.	State, outcome, trait, process	Literature review / Conceptual paper
Hadjielias, E., Christofi, M., & Tarba, S. (2022). Contextualizing small business resilience during the COVID-19 pandemic: Evidence from small business owner-managers. *Small Business Economics* 59:4, 1351–1380.	Outcome, trait, process	Empirical / Qualitative paper
Hanson, S. K., & Keplinger, K. (2021). The balance that sustains benedictines: Family entrepreneurship across generations. *Entrepreneurship and Regional Development*, 33:5–6, 442–456.	Outcome, Process	Conceptual paper
Hind, P., Frost, M., & Rowley, S. (1996). The resilience audit and the psychological contract. *Journal of Managerial Psychology* 11:7, 18–29.	Outcome, process	A combination of a limited Literature review and an Empirical / Quantitative paper
Hodges, J. (2017). Building capabilities for change: The crucial role of resilience. *Development and Learning in Organizations* 31:1, 5–8.	State, outcome, trait, process	Theoretical paper
Huang, Q., Xing, Y., & Gamble, J. (2019). Job demands–resources: A gender perspective on employee well-being and resilience in retail stores in china. International *Journal of Human Resource Management* 30:8, 1323–1341.	Trait	Empirical / Quantitative paper

Iles, P. (1997). Sustainable high-potential career development: A resource-based view. *Career Development International* 2:7, 347–353.	Outcome, trait	Literature review
Jin, C.-H. (2017). The effect of psychological capital on start-up intention among young start-up entrepreneurs: A cross-cultural comparison. *Chinese Management Studies* 11:4, 707–729.	State, outcome	Empirical / Quantitative paper
Karman, A. (2020). An examination of factors influencing the application of mechanisms of organizations' resilience to weather extremes. *Business Strategy and the Environment* 29:1, 276–290.	Trait	Empirical / Quantitative paper
Krisor, S. M., Diebig, M., & Rowold, J. (2015). Is cortisol as a biomarker of stress influenced by the interplay of work-family conflict, work-family balance and resilience? *Personnel Review* 44:4, 648–661.	Trait	Empirical / Quantitative paper
Kuntz, J., Connell, P., & Näswall, K. (2017). Workplace resources and employee resilience: The role of regulatory profiles. *Career Development International* 22:4, 419–435.	State, outcome, trait, process	Empirical / Quantitative paper
Lefebvre, J. -., Montani, F., & Courcy, F. (2020). Self-compassion and resilience at work: A practice-oriented review. *Advances in Developing Human Resources* 22:4, 437–452.	State, outcome, process	Literature review
Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human Resource Management Review* 21:3, 243–255.	Outcome, trait	Literature review
London, M. (1993). Relationships between career motivation, empowerment and support for career development. *Journal of Occupational and Organizational Psychology* 66:1, 55–69.	Trait	Empirical / Quantitative paper
Luthans, F., Luthans, K. W., & Luthans, B. C. (2004). Positive psychological capital: Beyond human and social capital. *Business Horizons* 47:1, 45–50.	Outcome	Theoretical / Conceptual paper
Lyons, S. T., Schweitzer, L., & Ng, E. S. W. (2015). Resilience in the modern career. *Career Development International* 20:4, 363–383.	State, outcome, trait, process	Empirical / Quantitative paper
Malik, P. (2022). Measuring the impact of learning organization on proactive work behavior: Mediating role of employee resilience. Asia-Pacific *Journal of Business Administration* 15:3, 325–344.	State	Empirical / Quantitative paper
Masood, H., Karakowsky, L., & Podolsky, M. (2021). Exploring job crafting as a response to abusive supervision. *Career Development International* 26:2, 174–200.	State, outcome	Q Empirical / Qualitative paper
McCormac, A., Calic, D., Parsons, K., Butavicius, M., Pattinson, M., & Lillie, M. (2018). The effect of resilience and job stress on information security awareness. *Information and Computer Security* 26:3, 277–289.	Process	Empirical / Quantitative paper
McCray, J., Turner, H., Hall, B., Price, M., & Constable, G. (2014). Social care mentorship and employee engagement in the transformation of the social care workforce. *Journal of Workplace Learning*, 26:3, 267–280.	State, outcome, trait	Empirical / Qualitative paper / case study

McInnis-Bowers, C., Parris, D. L., & Galperin, B. L. (2017). Which came first, the chicken or the egg?: Exploring the relationship between entrepreneurship and resilience among the boruca indians of costa rica. *Journal of Enterprising Communities* 11:1, 39–60.	State, outcome, trait, process	Empirical / Quantitative paper (Case study)
Meintjes, A., & Hofmeyr, K. (2018). The impact of resilience and perceived organisational support on employee engagement in a competitive sales environment. *SA Journal of Human Resource Management* 16:1, 1–11.	State, outcome, trait, process	Empirical / Quantitative paper
Mendy, J. (2020). Bouncing back from workplace stress: From HRD's individual Employee's developmental focus to multi-facetted collective workforce resilience intervention. *Advances in Developing Human Resources* 22:4, 353–369.	State, outcome, trait, process	Literature review
Meneghel, I., Borgogni, L., Miraglia, M., Salanova, M., & Martínez, I. M. (2016). From social context and resilience to performance through job satisfaction: A multilevel study over time. *Human Relations* 69:11, 2047–2067.	State, trait	Empirical / Quantitative paper
Mitsakis, F. V. (2020). Human resource development (HRD) resilience: A new 'success element' of organizational resilience? *Human Resource Development International* 23:3, 321–328.	State, outcome	Literature review
Moenkemeyer, G., Hoegl, M., & Weiss, M. (2012). Innovator resilience potential: A process perspective of individual resilience as influenced by innovation project termination. *Human Relations* 65:5, 627–655.	Outcome	Empirical / Qualitative paper (Case study)
Mokline, B., & Ben Abdallah, M. A. (2021). Individual resilience in the organization in the face of crisis: Study of the concept in the context of COVID-19. *Global Journal of Flexible Systems Management* 22:3, 219–231.	Process	Empirical / Qualitative paper (+ Literature review)
Moreno, A., Navarro, C., Molleda, J. -., & Fuentes-Lara, M. C. (2019). Measurement and predictors of resilience among latin american public relations professionals: An application of the connor-davidson resilience scale (CD-RISC). *Journal of Communication Management* 23:4, 393–411.	State, outcome, trait, process	Empirical / Quantitative paper
Mukerjee, J., Montani, F., & Vandenberghe, C. (2021). A dual model of coping with and commitment to organizational change: The role of appraisals and resources. *Journal of Organizational Change Management* 34:5, 1144–1161.	Trait	Literature review / Conceptual paper
Mzid, I., Khachlouf, N., & Soparnot, R. (2019). How does family capital influence the resilience of family firms? *Journal of International Entrepreneurship* 17:2, 249–277.	Trait	Empirical / Qualitative paper
Ngoasong, M. Z., & Groves, W. N. (2016). Determinants of personal resilience in the workplace: Nurse prescribing in an african work context. *Human Resource Development International* 19:3, 229–244.	Outcome, trait	Empirical / Qualitative paper

Nimmi, P. M., Kuriakose, V., Donald, W. E., & Muhammed Nowfal, S. (2021). HERO elements of psychological capital: Fostering career sustainability via resource caravans. *Australian Journal of Career Development* 30:3, 199–210.	State, outcome, process	Empirical / Quantitative paper
Noe, R. A., Noe, A. W., & Bachhuber, J. A. (1990). An investigation of the correlates of career motivation. *Journal of Vocational Behavior* 37:3, 340–356.	Trait	Empirical / Quantitative paper
Nolzen, N. (2018). The concept of psychological capital: A comprehensive review. *Management Review Quarterly* 68:3, 237–277.	State, outcome, trait	Literature review
Ojansivu, I. T., & Hermes, J. (2021). Maintaining business relationships: Resilience through institutional work. *Journal of Business and Industrial Marketing* 36:11, 2049–2061.	Process	Empirical / Qualitative paper
Ollier-Malaterre, A. (2010). Contributions of work-life and resilience initiatives to the individual/ organization relationship. *Human Relations* 63:1, 41–62.	State, outcome	Empirical / Qualitative / Quantitative paper (Case study)
Partouche-Sebban, J., Rezaee Vessal, S., & Bernhard, F. (2022). When co-creation pays off: The effect of co-creation on well-being, work performance and team resilience. *Journal of Business and Industrial Marketing* 37:8, 1640–1649.	Trait	Empirical / Quantitative paper
Petersen, K., & Youssef-Morgan, C. M. (2018). The “left side” of authentic leadership: Contributions of climate and psychological capital. *Leadership and Organization Development Journal* 39:3, 436–452.	State, outcome	Empirical / Quantitative paper
Peterson, S. J., Luthans, F., Avolio, B. J., Walumbwa, F. O., & Zhang, Z. (2011). Psychological capital and employee performance: A latent growth modeling approach. *Personnel Psychology* 64:2, 427–450.	State, outcome	Empirical / Quantitative paper
Pitichat, T., Reichard, R. J., Kea-Edwards, A., Middleton, E., & Norman, S. M. (2018). Psychological capital for leader development. *Journal of Leadership and Organizational Studies* 25:1, 47–62.	State, outcome	Empirical / Quantitative paper
Powley, E. H. (2009). Reclaiming resilience and safety: Resilience activation in the critical period of crisis. *Human Relations* 62:9, 1289–1326.	State, outcome, trait, process	Empirical / Qualitative paper
Puja Prasad, & Sandhyavani, K. V. (2019). The impact of demography on psychological capital: An empirical study in the retail sector. *International Journal of Management* 10:1, 43–50.	State, outcome	Empirical / Quantitative paper
Raetze, S., Duchek, S., Maynard, M. T., & Kirkman, B. L. (2021). Resilience in organizations: An integrative multilevel review and editorial introduction. *Group and Organization Management* 46:4, 607–656.	State, outcome, trait, process	Literature review / conceptual paper
Raqshin, S., & Nirjar, A. (2012). Accruing individual potential for creativity and innovation in biotechnology firms. *International Journal of Innovation and Learning* 11:2, 162–181.	State, outcome	Empirical / Qualitative paper (Case study)

Rees, G., & Rumbles, S. (2012). Continuous organizational change and burnout. *International Journal of Knowledge, Culture and Change Management* 11:3, 179–194.	State, outcome, trait	Empirical / Quantitative paper
Sahni, S., Kumari, S., & Pachaury, P. (2021). Building emotional resilience with big five personality model against COVID-19 pandemic. *FIIB Business Review* 10:1, 39–51.	State, outcome, trait, process	Empirical / Quantitative paper
Santoro, G., Bertoldi, B., Giachino, C., & Candelo, E. (2020). Exploring the relationship between entrepreneurial resilience and success: The moderating role of stakeholders' engagement. *Journal of Business Research* 119, 142–150.	State, outcome, trait, process	Empirical / Quantitative paper
Santoro, G., Messeni-Petruzzelli, A., & Del Giudice, M. (2021). Searching for resilience: The impact of employee-level and entrepreneur-level resilience on firm performance in small family firms. *Small Business Economics* 57:1, 455–471.	State, outcome, trait, process	Empirical / Quantitative paper
Sarfraz, M., Nisar, Q. A., & Raza, A. (2022). Expatriates' adjustment and performance in risky environments: The role of organizational support and rewards, risk propensity and resilience. *Personnel Review* 52:4, 1126–1145.	Trait	Empirical / Quantitative paper
Sarkar, A., & Garg, N. (2020). "Peaceful workplace" only a myth?: Examining the mediating role of psychological capital on spirituality and nonviolence behaviour at the workplace. *International Journal of Conflict Management* 31:5, 709–728.	State, outcome, trait	Empirical / Quantitative paper
Seville, E. (2018). Building resilience: How to have a positive impact at the organizational and individual employee level. *Development and Learning in Organizations* 32:3, 15–18.	Trait, process	Theoretical paper
Sharma, S., & Sharma, S. K. (2020). Probing the links between team resilience, competitive advantage, and organizational effectiveness: Evidence from information technology industry. *Business Perspectives and Research* 8:2, 289–307.	State, outcome, trait, process	Empirical / Quantitative paper
Smith, K. J., Emerson, D. J., Boster, C. R., & Everly, G. S. (2020). Resilience as a coping strategy for reducing auditor turnover intentions. *Accounting Research Journal* 33:3, 483–498.	Outcome, trait	Empirical / Quantitative paper
Srivastava, S., & Madan, P. (2020). The relationship between resilience and career satisfaction: Trust, political skills and organizational identification as moderators. *Australian Journal of Career Development* 29:1, 44–53.	State	Empirical / Quantitative paper
Srour, Y., Shefer, N., & Carmeli, A. (2022). Positive chair-CEO work relationships: Micro-relational foundations of organizational capabilities. *Long Range Planning* 55:3, 102124–.	State, outcome, trait	Empirical / Qualitative paper
Steen, R., & Pollock, K. (2022). Effect of stress on safety-critical behaviour: An examination of combined resilience engineering and naturalistic decision-making approaches. *Journal of Contingencies and Crisis Management* 30:3, 339–351.	Trait	Empirical / Qualitative paper

Stokes, P., Smith, S., Wall, T., Moore, N., Rowland, C., Ward, T., & Cronshaw, S. (2019). Resilience and the (micro-)dynamics of organizational ambidexterity: Implications for strategic HRM. *International Journal of Human Resource Management* 30:8, 1287–1322.	State, outcome, trait, process	Empirical / Qualitative paper
Teng-Calleja, M., Hechanova, M. R. M., Sabile, P. R., & Villasanta, A. P. V. P. (2020). Building organization and employee resilience in disaster contexts. *International Journal of Workplace Health Management* 13:4, 393–411.	Trait, process	Empirical / Qualitative / Quantitative paper
Tonkin, K., Malinen, S., Näswall, K., & Kuntz, J. C. (2018). Building employee resilience through wellbeing in organizations. *Human Resource Development Quarterly* 29:2, 107–124.	Outcome	Empirical / Quantitative paper
Turner, N., Kutsch, E., Maylor, H., & Swart, J. (2020). Hits and (near) misses. exploring managers' actions and their effects on localised resilience. *Long Range Planning* 53:3, 101944–	State, outcome, trait, process	Empirical / Qualitative paper
Vanhove, A. J., Herian, M. N., Perez, A. L. U., Harms, P. D., & Lester, P. B. (2016). Can resilience be developed at work? A meta-analytic review of resilience-building programme effectiveness. *Journal of Occupational and Organizational Psychology* 89:2, 278–307.	State, outcome, trait, process	Meta-analysis
Varshney, D. (2022). Machiavellianism, self-concept and resilience: Do they affect employee performance? A moderated-mediated analysis. *International Journal of Productivity and Performance Management* 72:7, 2093–2118.	State	Empirical / Quantitative paper
Vickers, M. H., & Kouzmin, A. (2001). 'Resilience' in organizational actors and rearticulating 'voice': Towards a humanistic critique of new public management. *Public Management Review* 3:1, 95–119.	State, outcome, trait	Empirical / Qualitative paper
Visser, W. (2021). Measuring future resilience: A multilevel index. *Corporate Governance (Bingley)* 21:2, 252–267.	State, outcome, trait, process	Literature review / Empirical / Quan-titative paper
Vough, H. C., & Caza, B. B. (2017). Where do i go from here? sensemaking and the construction of growth-based stories in the wake of denied promotions. *Academy of Management Review* 42:1, 103–128.	State, outcome, trait, process	Literature review
West, B. J., Patema, J. L., & Caesten, M. K. (2009). Team level positivity: Investigating positive psychological capacities and team level outcomes. *Journal of Organizational Behavior* 30:2, 249–267.	State, outcome	Empirical / Quantitative paper
Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A., & Zhao, E. Y. (2017). Organizational response to adversity: Fusing crisis management and resilience research streams. *Academy of Management Annals* 11:2, 733–769.	Trait, process	Literature review
Zheng, W., Kark, R., & Meister, A. L. (2018). Paradox versus dilemma mindset: A theory of how women leaders navigate the tensions between agency and communion. *Leadership Quarterly* 29:5, 584–596.	Outcome, trait, process	Theoretical paper / Literature review

On the Use of Arguments and Perspectives in Diffusing IT-Related Innovations in Financial Accounting: An Analysis of Articles in Professional Accounting Journals

Pirkko Jaatinen and Salme Näsi

Abstract

This study addresses the diffusion of knowledge of information technology (IT) -related innovations in financial accounting over time. Drawing on argumentation, rhetoric analysis, and innovation diffusion theory, we examine what main arguments and perspectives were used to promote the diffusion of IT-related innovations in financial accounting in articles published in professional accounting journals. In a longitudinal investigation of articles in two Finnish professional accounting journals between 1970 and 2021, we identified four categories of arguments and the related rhetorical means used to diffuse knowledge about IT innovations in financial accounting. Arguments related to savings in costs and time and to the efficient-choice perspective clearly dominated. Taking Finland as a case in point, an illustrative example, our findings provide important insights into how knowledge about IT innovations has been diffused, especially by professional journals.

Keywords

Financial accounting, information technology, digitalization, innovation diffusion, argumentation, rhetorical analysis, historical research, professional journals as mass media

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1 Introduction

This study addresses the diffusion of knowledge of information technology (IT) -related innovations in financial accounting over time. Research on this topic is important because financial accounting is a crucial part of any firm's accounting tasks, comprising bookkeeping, auditing and other practices related to financial accounting, such as invoicing and communication with taxation and other public authorities. Many IT solutions, either new or perceived as new and ranging from the advent of the first computers to robotics, have been introduced into financial accounting in past decades, significantly influencing accounting practice and research (e.g., Applebaum & Nehmer, 2017; Ferguson & Seow, 2011; Gullkvist, 2011; Kosonen, 2005; Ojala, Penttinen, Collins & Virtanen, 2018; Poston & Grabski, 2000). While this research has added to the knowledge of various IT innovations and also of the main stages and phases in their historical development in past decades (Jaatinen, 2009; Jaatinen, Kihn & Näsi, 2021; Alexandersson, Jansson & Jonnergård, 2023), a more comprehensive picture is needed of how the diffusion of knowledge of the innovations was accomplished. Accounting innovations do not necessarily diffuse solely by popular demand; they may also require proponents and communication channels to diffuse successfully (Abrahamson, 1991).

We are interested in how IT innovations have been promoted in professional accounting journals. Our data were collected from the two main professional accounting journals published in Finland between 1970 and 2021, i.e., over the past five decades. Because 99.5 percent of all Finnish businesses are small and medium-sized enterprises (SMEs) with fewer than 100 employees (Statistics Finland, 2018), this fact about the Finnish enterprise context is likely to influence our data. The articles selected were often been targeted at representatives of SMEs and/or their accounting firms rather than just those of large pioneering enterprises.

The IT development in financial accounting during the last half century can be divided into three stages: computerization, the introduction of Internet-based technology and the integration of machine learning and automation (Alexandersson *et al*, 2023). These three stages form a rough line of development, but in our earlier studies (Jaatinen, 2009 and Jaatinen *et al*, 2021), we distinguished seven phases in the development of IT-related innovations in financial accounting in the Finnish SME context: 1) the advent of large computers and minicomputers (since the 1970s), 2) microcomputers and data transfer innovations (since the 1980s), 3) Internet and electronic data transfer innovations (since the 1990s), 4) Single Euro Payment Area (SEPA) and online tax accounting (since the late 2000s), 5) net invoicing (since the 2000s), 6) projects seeking to develop electronic and automated financial reporting since the 2010s and 7) the ideology of the Digi leap (in the 2010s) (Jaatinen *et al*, 2021). These IT-related development phases form the background for our analysis, but here they no longer appear in chronological or other historical order.

Finland, as one of the pioneering and frontrunner countries in information and telecommunication technologies in the 1990s (Karika, 2017; Galabova, 2012), in e-Accounting innovations, such as computerized data transmission, paperless accounting, eInvoicing and B2B NetInvoicing (Lahti & Salminen, 2008; Jaatinen, 2009), digitalization and eAdministration (Ministry of Finance, 2017), is an appropriate example to use as the empirical setting for the present study. Our results provide empirical evidence from Finland, but they also contribute to increasing the understanding of the diffusion of IT innovations in financial accounting in comparable Nordic and other European countries.

This study applies as its theoretical approaches the rhetorical analysis (Perelman, 1996; Kakkuri-Knuutila, 2002) and the supply-side perspective of innovation diffusion theory (Rogers, 1962; Abrahamson, 1991 and 1996). A rhetorical approach is used for a detailed analysis of the arguments and rhetorical means used in promoting the IT innovations while innovation diffusion theory provides tools for further analysis. According to innovation diffusion theory, proponents (fashion-setters) disseminate innovations by means, for instance, of articles. (Rogers, 1962; Abrahamson, 1996, 269). Our empirical analysis entails a longitudinal historical investigation of articles published in professional accounting journals focusing on the arguments and perspectives used at different times to promote the adoption of IT innovations in financial accounting.

This study makes several contributions to the accounting literature. Firstly, previous research has largely focused on specific innovations in management accounting, such as Activity Based Costing (e.g., Malmi, 1999; Lukka & Granlund, 2002) and Balanced Score Card (Ax & Bjoernenak, 2005) or accounting information systems, such as enterprise resource planning (ERP) systems (e.g., Teittinen, 2008; Lepistö 2015). In contrast, this study focuses on IT innovations in financial accounting; these have been analysed much less. Secondly, previous studies on management accounting innovations have mostly used theories from sociology, economics, contingency theory, and organizational behaviour in particular (Zawawi and Hoque, 2010). A smaller stream of studies has used discourse analysis (Lepistö, 2014), communication (Lukka & Granlund, 2002) and rhetorical literature (Jaatinen, 2009; Lepistö, 2015; Lepistö, Lepistö & Kallio, 2021), or even a virus perspective (Johanson & Madsen, 2019). By contrast, this study uses both rhetorical analysis and innovation diffusion theory. Thirdly, while previous studies have largely conducted cross-sectional analyses of specific innovations, our study addresses the arguments and perspectives used in the diffusion of knowledge of IT innovations in financial accounting over a long period of time. In so doing, our study is also related to accounting history, which has constituted its own sub-discipline for at least half a century[1].

The *specific research question* of this study is: *What were the main arguments and related rhetorical means and perspectives used to promote the diffusion of the IT-related innovations in financial accounting in professional accounting journals?* According to earlier research, media texts guide public opinion, create reality and attempt to convince – consciously or not - the audience of its own version of reality (Fairclough, 1995, van Dijk, 1997, Apostol, 2011). We therefore contend that professional accounting journals provide us with usable data when studying the arguments promoting IT innovations in financial accounting.

The subsequent sections of this paper are organized as follows. The next section reviews our theoretical framework, consisting of argumentation and rhetoric analysis and innovation diffusion theory. The research methods and data are then described, followed by an empirical analysis of the main arguments and perspectives used in the promotion of the innovations. The final section presents the conclusions with their theoretical contributions, practical implications and proposals for future research topics.

1 Accounting history has its own scientific associations (e.g. the Academy of Accounting Historians, established in 1973, and Accounting History Special Interest Group, AHSIG), international conferences and publications (e.g. the *Accounting Historians Journal* and the Accounting History). (See e.g. Goffman, Roberts, and Previts, 1989; Walker, 2005). In addition, papers on the history of accounting have been published in several journals of accounting such as *Accounting, Organizations and Society* (see Napier, 2006) and *Accounting, Auditing and Accountability Journal* (see Hopwood, 1990; Carnegie, 2014). In the 1960s, the Academy of Accounting Historians classified the areas of interest in the history of accounting into 25 items, one of which was already at that time “mechanized accounting and computers” (see Näsi, 1990, 253).

2 Theoretical framework

The theoretical framework of this paper is based on aspects of two theoretical approaches: rhetorical analysis and argumentation as the theoretical-methodological framework (Perelman, 1996; Kakkuri-Knuutila, 2002; Vuori, 2023), and the supply-side perspective of innovation diffusion theory (Rogers, 1962; Abrahamson, 1991 and 1996). Firstly, a rhetorical approach is used to analyse the discursive justifications, arguments and rhetorical means to promote IT innovations in financial accounting. (See Kakkuri-Knuutila, 2002, 233). Secondly, innovation diffusion theory affords frameworks for further interpretations and additional understanding of the diffusion of knowledge about IT-related innovations in professional accounting journals.

New rhetoric (in contrast to ancient rhetoric) can also be called the study of argumentation because it emphasizes the justification of claims as persuasion (Vuori, 2023). Rhetoric is understood as exerting influence on the audience regarding the validity of some argument and an attempt to secure their commitment to it (Jokinen, 1999a, 46). Perelman (1996, 24), one of the first and most important argumentation theorists of the twentieth century, divides audiences into universal and specific. Professional accounting journal articles are targeted specifically at accounting professionals, i.e., at a specific audience.

According to Perelman (1996, 25) statements made to the specific audience will use persuasion, and the argumentation is logical and conditional. Perelman also directs attention to those aspects of the presentation that seek to reinforce or change the audience's perception of things (Palonen & Summa 1996, 10–11.). According to Perelman (1996, 41), authors must always differentiate the starting points of their arguments from the values and arguments already accepted by the audience.

According to Jokinen's (1999b) synthesis, there are many rhetorical means to convince the audience about the person making the argument and about the arguments themselves. For example, the following means can be used to enhance the assertiveness of the person evincing the arguments: 1) distancing their own interests from the argument, 2) establishing themselves as experts and 3) convincing by consensus, an expert statement or research findings. Rhetorical means, such as the following, may be used to increase the validity of the arguments: making things appear as facts independent of the author; convincing by using categories, details or narratives; numerical and non-numerical quantification; use of metaphor, extreme expressions, pairs of contrasts, examples, appositions, repetition; and preparation for counter-arguments (Jokinen, 1999b, 132–155). While some of the means reinforce the assertiveness of the person presenting the arguments, others reinforce the argument itself. In practice, these two aspects are intertwined (Jaatinen 2009, 52). Furthermore, more than one argument is often presented at the same time (Kakkuri-Knuuttila & Halonen 2002, 76). Rhetorical analysis can be extended to the introduction of new technologies in organizations (Jaatinen 2009, 51; Lepistö 2015, 205; Lepistö et al, 2021).

Innovation diffusion research is rooted in the early works of Rogers (1962) and Abrahamson (1991) but continues to be highly significant among accounting scholars for explaining how and when knowledge of new management ideas and technology spread (Malmi, 1999; Ax & Bjørnenak, 2005; Bourmistrov, Grossi & Haldma, 2019; Haldma, Näsi and Grossi, 2012). Rogers (1962) defines the diffusion of innovations as the process "by which an innovation is communicated through certain channels over time among the members of the social system." Abrahamson (1991; 1996, 256) calls those proponents who diffuse innovations management fashion-setters and defines them as "organizations and individuals who dedicate themselves to producing and disseminating management knowledge." Fashion-setters disseminate innovations using articles, publications, mass media etc., (although the progress of innovations may be much slower than anticipated, Bjørnenak, 1997). While a variety of publications may contribute directly to the diffusion of management fashions, fashion-setters have also developed their own publications to disseminate various ideas and techniques (Abrahamson 1996, 269).

In this study, innovations are IT-related (business-to-business) innovations, i.e., 'new production inputs, machines, processes, and techniques adopted by firms or entrepreneurs for their own use' (Flambach, 1991), which provide new ways of accomplishing financial accounting tasks. Professional accounting journals form communication channels, and the authors of articles are fashion-setters and members of the social system in question.

According to Abrahamson (1991 and 1996), the proponents are likely to use arguments according to four perspectives. Firstly, according to the efficient choice perspective, innovations are adopted because they help adopters achieve organizational goals. Adopters of innovations make independent, rational choices motivated by technical efficiency. Secondly, according to the forced selection perspective, innovations tend to diffuse among groups of organizations when the innovations have the support of powerful organizations outside these groups, such as governmental bodies, labour unions or associations of managers. Thirdly, the fashion perspective expects that under conditions of uncertainty organizations as a group imitate administrative models promoted by "fashion-setting organizations" or "opinion leaders" such as consultancy firms, business schools or business mass media. Fourthly, in the fad perspective, the diffusion of innovations also occurs under conditions of uncertainty when organizations within a group imitate other organizations within that group (Abrahamson, 1991, 592–599). According to Abrahamson (1991, 586), the latter three perspectives can also be used to explain when and how technically inefficient innovations diffuse.

3 Research method and data

Historical research is characterized by the study of times and changes in the past and the research material comprises the remains of the past (see e.g. Heikkinen, 1980; Rasila, 1977). Our study presents qualitative historical research[2] that uses textual data – media texts as its empirical data sources. Articles published in the two main professional accounting journals in Finland between 1970 and 2021, i.e. covering about half a century, were investigated in order to analyse the rhetorical means of the arguments – and possible counter-arguments – used by the authors to inform and convince their audience (readers of the professional journals) of the advantages of various IT-related innovations in financial accounting at different times. These two journals are *Tilisanomat* ('Account Magazine', published since 1979)[3] and *Profiitti* ('Profit'); the latter having also been known as *Tilintarkastajalehti* ('Auditor journal') until the end of 1970, as *Tilintarkas-*

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2 On the one hand this study represents traditional accounting history because accounting change is regarded as the modification of technique, accounting is restricted to the tasks of traditional record-keeping, and change is understood as technical improvement, explicable as a better way of achieving a pre-given goal. On the other hand, our study counts as new accounting history due to the theoretical frameworks used (Rhetoric approach and Innovation Diffusion theory) in interpreting the arguments and perspectives used in disseminating innovations. (see e.g. Carmona, Ezzamel & Gutiérre, 2004)

3 *Tilisanomat* has been published by the Association of Finnish Accounting Firms (Suomen Taloushallintoliitto ry., TAL and its predecessor associations). This is the national union of authorized firms and societies providing financial accounting and management services in Finland. The members of TAL comprise some 800 authorized accounting firms and 3,500 professional accountants, bookkeepers and financial managers. All members of the Association receive the journal free of charge as a membership benefit.

tus ('Auditing') during the period 1971–2012, as *Balanssi* ('Balance') during the period 2013–2016 and as *Profiitti* ('Profit')[4] since 2017. Other professional accounting journals with smaller circulations were excluded, likewise other possible publications, seminar documents, textbooks, etc.

This paper continues research on the history of IT innovations based on the same professional accounting journal data as that used in Jaatinen et al. (2021). They identified for consideration 341 relevant articles mentioning computers and electronic and digital applications in relation to financial accounting and (2) divided the main IT-related developments in financial accounting into two primary stages and seven phases from the 1970s to the present. For this paper, we used the same empirical data but added 19 relevant articles published in the two latest issues of those journals. Therefore, in this study, we had 360 articles to trace the arguments and rhetorical means the authors used to promote and diffuse knowledge about the IT-related innovations in the context of financial accounting.

For the first paper (Jaatinen et al., 2021), a huge number of journal articles identified as relevant were read (at least two rounds of reading) and analysed by the authors. Therefore, when embarking upon the present paper, the authors already were very familiar with the data, which had been discussed several times and from various perspectives. In other words, we had a good pre-understanding of our data, including the backgrounds of the authors. One more round of systematic reading was needed for this paper and discussions among the researchers to reach a consensus on the main arguments and to select representative text samples from the huge amount of empirical material. Several returns to the material were also important to minimize errors and biases (i.e., to improve reliability, Eriksson & Kovalainen, 2008, 292) as well as to ensure accurate descriptions and valid conclusions (Ryan, Scapens and Theobald, 2002, p. 141).

Our empirical analysis starts with the arguments and rhetorical means, which, on the one hand, might be considered a theoretical-methodological choice, but on the other hand, a form of discourse analysis that specifically emphasizes the social relations built into the text between the speaker or writer and their audience (Vuori (2023). The writers in our data are mostly auditors, accountants or representatives of various institutions; they are among the top professionals in their respective areas of expertise. Table 1 presents the professional or organizational backgrounds of the authors of the articles in our data[5]. This table provides an idea[6] of whose voice has been heard in professional accounting journals in Finland.

4 *Tilintarkastajalehti/Tilintarkastus/Balanssi/Profiitti* is the only professional journal on auditing in Finland. The Association of Finnish Auditors (Suomen Tilintarkastajat ry) published it in hard copy until the end of 2016 and thereafter in electronic form on the Association's web page

5 The total number of authors - 391 - is greater than the number of articles – 360 - due to the co-authored articles.

6 The table was prepared according to the position or organization of the author mentioned in the article, although the author may have several positions and in several organizations and these may change over time.

Table 1 Professional or organizational background of the authors of the articles in our data in two professional accounting journals during the period 1970–2021

DECADES							
Author	*1970s*	*1980s*	*1990s*	*2000s*	*2010s*	*2020–21*	*Total*
Auditor	8	23	34	18	22		105
Accountant	0	12	17	13	15	3	60
Association [1]	3	2	4	8	33	8	58
Journalist		1	1	10	29	3	44
Software house	1	7	1	2	11	8	30
Government		3	3	7	14	2	29
Others[2]	5	9	1	5	1		21
Bank	1	5	8		2		16
Other firm	2	4		3	5	2	16
Academics			1	3	8		12
In total:	20	67	70	68	140	26	391

1 For example, the Chamber of Commerce, Association of Finnish Accounting Firms, The Finnish Bankers' Association, and TIEKE Information Society Development Centre
2 For example, authors of books and consultants

4 Analysis of arguments and rhetorical means in diffusing IT innovations in financial accounting

In this paper we analyse the arguments and perspectives used in the professional journal articles to promote the diffusion of IT innovations in order to convince the audience to accept the new ideas and IT-related methods in financial accounting. We report our analysis under four headings, which also represent the four main categories of discourses or arguments found in the analysis: 1) cost and time savings through IT innovations, 2) innovations to reduce administrative burden, 3) Finland as a frontrunner in IT innovations and 4) changes in the nature of accounting work.[7] These four categories represent the authors' common understanding of the main arguments but apparently, very similar or comparable arguments would have been presented if another research group had done the analysis.

The first and last arguments i.e., 'cost and time savings' and 'changes in accounting work' were present in the texts in all five decades, whereas the second and third arguments 'IT-innovations reduce administrative burden' and 'Finland is a frontrunner in IT' were present during the last two to three decades. In the following, argumentation and rhetorical analysis are first presented under each of the four headings, followed by our interpretations concerning the perspectives provided by innovation diffusion theory.

4.1 Cost and time savings through IT innovations

The 1970s marked a turning point in financial accounting technology. Large firms purchased large computers and mini-computers (Ahtiainen, 1988), developed software and diffused knowledge about the new ways of organizing financial accounting tasks (Jaatinen et al., 2021, 91). Only

7 References in this part of the article are to be found in the list of References to the data sources following the list of references.

a few SMEs and accounting firms had their own computers in the 1970s and early 1980s. They still used either manual or Taylorix bookkeeping and bookkeeping machines (Jaatinen, 2009, pp. 71–75), and later began to use the services provided by computer service centers and automatic data processing (ADP) companies and banks (Ahtiainen, 1985; Forsblom, 1973).

In the 1970s and 1980s, writing was often technology-focused and readers were reassured that the computer was a technical aid. At this time the writing not only encouraged the acquisition and deployment of computers but warned of the dangers of computers, such as misuse of computer applications (Tuokko, 1989a), the auditability of automated data processing (ADP) systems and dangerous work combinations in financial accounting (i.e., where the same person registers the accounts for the accounting documents, saves them, acts as an operator, updates the files, prints the lists and provides control information to the accounting software) (Karlsson, 1990).

In the 1970s an issue commonly discussed in professional journal articles centered on the costs and benefits influencing companies' decisions to purchase computers and software. *Cost-benefit analysis* was emphasized in the process of ADP acquisitions. The solution selected must yield greater benefits than costs. No mention was made of the problems of scope, measurement, periodization or valuation relating to the profitability calculations of such ADP investments, or, for example, to the length of the period of investment calculations. The following citation illustrates the discussion related to the deployment of automatic data processing:

> *"Is it rational to use ADP for the above-mentioned tasks, is it profitable, have all the options of ADP been properly utilized. … It is still rare to be able to calculate the profitability of ADP. Instead, more and more attention is being paid to the analysis of economic efficiency.* (Suoniemi, 1970).

During the 1980s the emergence of microcomputers and the declining costs of computers and software made it economically feasible for SMEs and accounting firms also to procure and use computers for financial accounting tasks. "Why does it make sense for an accounting firm to acquire its own computer?" was a particular issue raised in several articles (e.g., Mäkinen, 1983). As the price of computers began to fall, having one's own computer was seen as a necessity. In 1990 an article described the cost savings as follows:

> *"Accounting firms have very consistently implemented a strategy of low costs throughout their history. Accounting firms have introduced ADP among others early on, because through that they have been able to lower costs. At first accounting firms used ADP service centres, but during the 1980s the majority changed to using their own computers."* (Mäkinen, 1990)

In professional journal articles, the benefits of IT innovations (such as microfilm and mechanical data transmission in the late 1970s) were very commonly reduced to cost savings from decreased printing and use of paper in accounting. Justification and approval for "bank statements as accounting documents??" (the so-called TITO reform at the turn of the 1990s) was also sought by emphasizing the economic benefit of "paperless accounting". However, it was acknowledged in the articles that first and foremost it was the banks, which benefitted from the TITO reform and that they sought to reduce their costs since banks did not need to move account transfer forms from one office to another and further to the customers. In 1990, Vahtera (Authorized Auditor, and at the time the most enthusiastic advocate of IT innovations in financial accounting in Finland) rationalized the eagerness of financial institutions to promote the TITO reform by subsequent economic arguments:

> *"Half a billion transactions annually already go through bank and post giro. If transferring one transfer form from one bank to another and further to the customer takes a cautiously estimated 15 seconds, the annual value of work time saved is 300 Mmark" (=about 50 million Euros]! …"The sum is enormous, therefore it is understandable that financial institutions leave no stone unturned, so that the new bank statement procedure will also be good from the accountable firm's point of view."* (Vahtera, 1990.)

At the turn of the new millennium net invoicing was promoted with article titles such as 'Electronic invoicing brings new intelligence to the accounting firm' (Launonen, 2007), 'Paper invoice has no future' (Gedik, 2008), 'Net invoicing moves rapidly ahead' (From, 2009), and 'Entrepreneurs encouraged to go for net invoices' (Hurme, 2011). In these articles, presented by the editors of the journals and representatives of the Information Society Development Centre (TIEKE), net invoicing or e-Invoicing development was seen as necessary, inevitable, and as having no alternative (Jaatinen, 2009, 143–147). Both e-Invoicing and the electrification of financial management were initially justified by time and cost savings and later as an important step towards automation in financial accounting. The rapid spread of net invoicing, especially among business-to-business transactions, and huge cost savings were already predicted in 2002 by Vahtera:

> *"With net invoicing we can reduce the costs by as much as 80–90 percent compared to paper invoicing."*

Vahtera predicted that by 2010, 90% of B-to-B invoicing would entail net invoicing. This failed to materialize due to various obstacles. According to some articles, the lack of a commonly agreed standard was one of the main reasons why the utilization of net invoicing did not develop and spread rapidly.

The time and cost savings of e-Invoicing were also highlighted by numbers, although they were mostly made up and possibly exaggerated. In addition to cost savings, arguments about environmental benefits were emphasized: The following are a few examples of the significant savings and related arguments initially e-invoicing and later on electronic financial administration were expected to yield:

> *"Processing a paper invoice means on average 30 Euros, a net invoice 10 Euros and automatic solutions drop it to one Euro." It is also an important point that a net invoice is four times more environmentally friendly than a paper invoice."* (Hurme, 2011).

> *"More efficient net invoicing could result in savings of about one billion euro in the Business-to-Business sector alone."* (Rytsy, 2015).

> *"Electronic financial administration can halve the costs and bring about significant environmental benefits. In addition to the efficiency benefits of e-Invoicing, the carbon footprint is shrinking to a quarter from baseline* (Tenhunen, 2013).

Since the 2010s, a number of projects have sought to develop *electronic financial statements and automated financial reporting* (Jaatinen et al., 2021, 96). The key issue in these projects has been to agree on a standard model for structured data by defining the format in which invoices, receipts and financial statement information can be entered into financial management systems without manual data entry.[8] Argumentation in the professional journals was based on huge cost savings and changes?? in the nature of accounting professionals' work:

> *"Integrated financial management saves billions and facilitates the work of financial management professionals".* (Helin, 2009).

Counterarguments to cost and time savings were very rare. One of the authors in the late 1980s referred to investments in IT as *a status symbol* and emphasized them for reasons of *image* and *competitiveness* (Tuokko, 1989b). Another author mentioned the ADP acquisition process as a result of an imitation process rather than of cost-benefit analysis:

> *"Buy exactly what your competitor has, so you are sure not to be acquiring an inferior system. … Rather than doing a cost-benefit analysis, one acts upon one's instincts and follows other firms."* (Siponmaa, 1989.)

Pauli Vahtera executed a *volte face* back in 2010 and criticized attempts to target cost savings with different IT-related reforms. In his article entitled "The Hope Reform of the Century – A Year Without Reforms", he wrote that there had been a change after change, consuming a great deal of money and time. He referred to the IT-related reforms, such as 'Tax account', SEPA, e-Invoicing, e-financial reporting code and wrote:

> *"Electronic financial management was supposed to achieve vast savings for companies. With appropriately implemented e-Invoicing some of them have succeeded in significantly reducing their amount of work. But there have been no monetary savings. The price of freedom has been heavy and paid to the system vendors, e-Invoicing operators and banks. … Every change costs accounting firms and their clients. There are annual fees, monthly fees, upgrade fees, additional module fees. Every change necessitates studying, participation in training, and extra work that the change occasions."* (Vahtera, 2010).

In conclusion, arguments of cost and time saving have regularly been used throughout the years to rationalize the acquisition and use of IT innovations. The argumentation reflects the inevitability and necessity of change. The articles were targeted at financial professionals, who no doubt like numbers, efficiency and rational behaviour. Even though in the early years the cost-benefit analysis was mentioned in some articles, concrete analyses of costs were not included in the articles. e.g. analyses of the costs of IT investments and annual running costs, costs of personnel training and maintenance of IT skills were not discussed. In the early decades of computerization, the *misuse of computers*, *audit problems* and *dangerous work combinations* were seen in some articles as threats to computerized accounting. Later, information security issues were raised in the articles, but more generally in relation to digitization and not just accounting.

All in all, *positive argumentation for IT development* was present through the ages and very few counter-arguments (see the basic concepts of argumentation: Besnard & Hunter, 2008) for the huge cost savings were presented. However, one of the most active authors and a former ar-

8 The first of these was the *Fully Integrated Accounting (FIA) project*, initiated by the Association of Finnish Accounting Firms (Taloushallintoliitto), some individual accounting firms, a software house and a business school and it promoted the interests of SMEs. The project focused on the automation of financial accounting processes with the aim of building a real-time net economy extending to accounts archiving, auditing and tax requirements.

dent proponent of IT innovations "changed his tune" in 2010, criticizing constant "change after change" and the monthly and yearly fees and continuous learning costs of IT applications. Such a critical approach was very exceptional in the data.

Regarding the perspectives offered by innovation diffusion theory, the authors throughout all five decades emphasized a *rational choice perspective* with aspects based on *technical efficiency and time and cost savings*. Such argumentation fits well with the values of the readership in question. According to Kakkuri-Knuutila and Halonen (2002), more than one argument is often presented at the same time. Cost savings were supported by other arguments, such as environmentally friendly paperless accounting. Arguments such as "paper invoicing has no future", "net invoicing is advancing rapidly" are rhetorical means to make the innovations appear inevitable and – depending on the person making the argument – may be interpreted by the audience to represent a sort of *forced selection perspective*.

4.2 Innovations to reduce administrative burden

The concept of "*administrative burden*" was much used in the first decade of the 21st century to refer to the administrative work and costs caused by the need to gather, modify and submit financial and other information to public authorities and other third parties, e.g. for taxation, statistics and other official reporting obligations. The argument for reducing administrative burden is rooted in the European Commission's 2007 Action Programme (Commission of the European Communities, Brussels, 24.1.2007). In Finland, however, the Government Programme of 1999 already stated that the administrative burden on SMEs would be reduced e.g., by improving the opportunities for more efficient data collection and combining the collection of information needed by different authorities (Jaatinen, 2009, 100). The aim of the EU Programme was to reduce by 25% the administrative burden of EU legislation and its implementation by 2012. The Commission estimated that the proposed reductions in reporting obligations could save SMEs an estimated € 1.7 billion per year. In Finland, the chairman of the steering group set up by the Ministry of Employment and the Economy to implement the EU Programme, stated that

> *"in Finland the administrative burden is about 1.5–2% of GDP, whereas in the EU the average is about 3.5%. It is difficult to reduce from so little, but you can always try to do things better."* (Poskiparta in Rytsy, 2009).

Financial accounting-related reporting was raised to the priority list of the Programme and was considered to be particularly relevant for small businesses. According to the aforementioned chairman of the steering group

> *"… the programme seems to focus on increasing the use of information technology and standards. … The aim is to reduce the administrative burden on companies, especially in relation to public authorities."*(Poskiparta in Rytsy, 2009)

Alleviation of administrative burdens saves money and improves GDP. It was estimated that a 25 percent reduction in the administrative burden would increase Finland's GDP growth by about 0.6% by 2025 (Rytsy, 2009) and that this could be achieved primarily by promoting electronic transactions. In 2010, the Finnish Ministry of Employment and the Economy issued a report on the costs of companies' financial administration. The following section has been citied in numerous articles:

> *"Standardized electronic reporting reduces administrative burden by ca. 250 million Euros. Financial statements, annual income tax returns and information needed by Statistics Finland can be taken care of with a just one click in the future."* (Koskentalo, 2013).

Alleviation of administrative burden was a recurring theme in several articles published in 'Account Magazine' at the turn of the 2010s. (Ahvenniemi, 2009; Koponen, 2010; Järvinen, 2010; Mutanen 2011). Administrative burden was used as a *rhetorical argument* (van Eemeren & Grootendorst, 1996; Symon, 2000) invoked in favour of developing electronic transactions for taxation, employers' obligations and other reporting to public authorities. Often the authors referring to reducing administrative burden were representatives of ministries or other public authorities. One of them, a representative of the Ministry of Trade and Industry, wrote in her article "Public administration cuts bureaucracy for businesses":

> *"Businesses face a total administrative burden of almost € 2 billion a year in complying with statutory disclosure obligations. The most important ways to reduce the burden are the coordinated development of electronic transactions and the simplification of reporting and notification obligations."* (Mutanen, 2011).

The project manager of the Finnish Information Society Development Centre (TIEKE) was one of the authors and principal actors promoting the idea of standardized electronic financial reporting and using the argument of reducing the administrative burden on businesses when all tasks would be handled at "just one click" or "one touch". The following titles and texts aptly illustrate her arguments:

> *"XBRL – Towards e-financial reporting: Aiming to reduce the administrative burden on businesses".* (Koskentalo, 2012)

> *"Hundreds of millions saved" "Standardized electronic financial reporting reduces administrative burden by around € 250 million. In the future, financial reporting, annual tax returns and the information required by Statistics Finland will be handled at one touch of a button.* (Koskentalo, 2013)

> *XBRL - financial reporting turbocharger. "When all transactions for the financial year are available in the form of a TALTIO transaction file, electronic financial reports (XBRL) forming will be easy – at one touch of a button".* (Koskentalo, 2014)

Alleviation of administrative burden recurs in a number of articles as an argument to convince the audience of the advantages of rapid digital development - the digi leap – in financial accounting. The "burden" itself represents a metaphor of an oppressive weight and was used as a rhetorical device. Another rhetorical expression -–"at one touch of a button" – was used to give the impression that financial accounting functions can be automated and all official obligations can be fulfilled almost effortlessly and without any problems. According to the *efficient choice perspective*, innovations are adopted because they help adopters achieve organizational goals. Seeking relief from the administrative burden represents an efficient choice, and because it concerns the statutory duties, automation is provided as the way to get rid of administrative burden and costs. Most authors were representatives of ministries and other organizations with IT development tasks and therefore their argumentation could be understood from *a forced selection* perspective of the diffusion of innovations theory.

4.3 Finland as a frontrunner in IT innovations

In the journal texts, Finland was often described as progressive compared to other countries - especially in banking and payment technologies and accounting legislation. Finland was the first country in the world to use bar code technology for the transmission of payments. In 1993, an author from the banking sector wrote about the spread of bar code technology in the transmission of payments as follows:

> *"Bar code technology has been introduced in Finland – the first country in the world – to be used in banks for the transmission of payments. ... The use of a bar code is suitable for all companies that bill by reference. Today, however, the greatest beneficiaries are large companies, whose customers pay their bills with payment machines.* (Fagerström, 1993.)

Electronic payments and bank statements as source documents in bookkeeping (i.e., the so-called TITO project) caused a spate of articles in the early 1990s. Finland in its time was seen as pioneering and as the most progressive country in the use of computers in banking:

> *"Finland is a pioneer in automated banking, with a large number of companies and thousands of individuals using computer links to banks."* (Stenius, Price Waterhouse Oy, 1991)

> *"TITO is still the most progressive in the world… We can be proud that the legislation regarding the utilization of IT is the most progressive in the world…"* (Salmi and Vahtera, 1995)

Accounting legislation throughout the decades was rapidly amended to enable the introduction of new IT-related solutions. As an example, the Accounting Act, which harmonized the Finnish accounting legislation with the European Union 4th and 7th Directives and entered into force on 31 December 1997, permitted companies to use e-Accounting methods without the permission of the Accounting Standards Board (*Kirjanpitolautakunta*) in all accounting tasks and documents except the Financial Accounts of the Accounting Period (*Tasekirja, Annual Report*), which still had to be in paper form. In the preparatory phase, a report was already produced on making the advanced Accounting Act even more advanced, specifically the reform in the provisions of accounting methods. Those tasked with drafting the proposal of the accounting method provisions shared their view in Account?? Magazine under the heading 'PROgressive Accounting Act Reform":

> *"The European Union does not have a directive affecting accounting methods. Harmonization could even have a negative effect on reforms as Finnish accounting practice is already now progressive compared to many EU countries."* (Salmi & Vahtera, 1996.)

Despite the progressive legislation and IT development - or because of it - the development has also led to unfavorable operating models for Finland, such as the transfer of financial administration tasks abroad. Large companies have set an example in handling financial management routines. A leading expert of the Association of Finnish Accounting Firms wrote in 2017 that large companies had sought to minimize their costs first by concentrating their financial management in service centers and, as a next step, moving financial management work to countries with cheaper labour costs – Estonia, Poland and India. As for SMEs and accounting firms, the expert in question wrote:

> *"No work has been moved to foreign countries by the accounting firms taking care of SMEs' financial management tasks, but many accounting firms have had to compromise on the contribution margin on the basic accounting and payroll services they provide. Price competition has intensified… One solution to these challenges is to increase the degree of automation in financial management… At the same time, it is possible to raise the profile, salary level and attractiveness of the profession of accountant among students".* (Fredman, 2017)

The continuous development of information technology and the rapid adaptation of the accounting legislation were used to create an image of Finland as a progressive country. The texts were based on predictions of the future and the idea that the development would continue, whether popular or not. In an interview, the project manager of the Enterprise Digitalization Project stated:

> *"Finland has been at the forefront of digitalisation, but maintaining it requires activities."* (Remes, 2021.)

In conclusion, Finland as "*a pioneer country in information technology*" was a widely used rhetorical means to encourage the readership to accept the coming IT-related innovations. Appealing to pioneering in general is an example of argumentation distancing the author's own interests from the argument (Jokinen, 1999b). The use of the frontrunner country argument was facilitated by both technological and legislative developments. Non-acceptance would suggest regression or backwardness. From the innovation diffusion theory perspective, an appeal to pioneering can be understood both as *a rational* choice and as a *forced selection*.

4.4 Changes in the nature of accounting work

One important phenomenon in IT development is the change in the work of accountants. Half a century ago, an accountant (bookkeeper) was a respected professional. Since the early days of computerization, the work of an accountant in the journal texts has been largely reduced to performing *routine* tasks – the manual recording of accounting documents – that should be *got rid of.* In 1981, the following was written about the impact of computer technology on accounting work:

> *Through the development of information processing technology, the majority of ... routine tasks have either been completely eliminated or moved to be performed elsewhere in the organization. The role change has caused a decrease in the number of personnel and a rise in the average level of education... When the development of information systems has simultaneously increased the amount of information available, it is of primary importance that the additional information available is used effectively within the framework of the time freed from routine tasks and, on the other hand, that one also knows how to request additional information.* (Vaartimo, 1981)

Over the last decades, there have been recurring notions about the transformation of the work of an accountant from routine work towards financial expert services. Advisory, consulting and expert tasks have been offered to the accounting firms, which were divided into two categories, i.e., mostly old-fashioned ones and, to a lesser extent, those producing expert services. The change was thought to happen very quickly. The following text is from 1986:

> *Accounting firms are currently changing from traditional bookkeepers to experts in business economics. Some of the accounting firms have already met the challenges of the future, but the vast majority still produce old-fashioned bookkeeping services. In 1990, a typical accounting firm is going to be quite different from today...*(Mäkinen, 1986)

The fear of accounting professionals exiting the field as a consequence of IT innovations has been counteracted by raising the status of accountants' work with sentences such as the following under the title "Accounting is nice" by the Editor of Chief of "Account Magazine" in 2013.

> *"The electrification of financial management has freed accountants from routines to do more productive jobs. Work efficiency has increased. The job description of an accountant is even more diverse and challenging. --- The industry needs young people interested in the financial management of the future, for whom combining strong financial expertise with digital financial management is a motivating challenge."* (Ahvenniemi, 2013)

The last texts on IT innovations in financial accounting in our data are about automatics and artificial intelligence (AI) (Fredman, 2017; Fischer, 2017; Remes, 2018a and 2018b), all of which are tools for reducing the (routine) work done by humans. The solution to profitability and other challenges lies in increasing the degree of automation. "Routine tasks are for robots" was a headline in 'Account Magazine' (*Tilisanomat*) in 2018 based on an interview with a manager in a firm providing software robotics for financial and personnel management solutions.

> *"Interest in software robotics has grown exponentially. … More and more organizations have found that software robotics can handle unnecessary routine work, allowing people to focus on customer service and developing their own work. In the future, it will be used as naturally as Excel is used today."* (Remes, 2018a)

A senior fellow (in Executive Education) expressed doubts about robotics when he wrote in 2019:

> *"Experiences of applying software robotics to the processes of financial management have varied, to say the least. As soon as something … changes, the robot typically stops working and needs to be reprogrammed or re-taught by hand."* (Tallberg, 2019).

In the debate on change in working life, digitalization, automation and robotics are easily associated with job losses. However, it was also argued that one could see significantly more opportunities in development. "We are going to be a financial management country", says the interviewee, a representative of a software robotics business. "This is now possible by leveraging robotization to automate routines."

> *"With software robotics, we have the opportunity to create new business and create 5,000 new jobs. In addition to Finnish companies, we can also get foreign companies to transfer their financial administration functions here.… We have a lot of training and research units related to robotics and artificial intelligence. The biggest challenge is applying the know-how in practice."* (Remes, 2018a).

A slightly more moderate development emphasizing the need for accounting personnel is seen in the following statements (originating in interviews with accounting professionals):

> *"In order to utilize robotics, in addition to an expert in technology, you need payroll clerks and accountants to master the substance and processes".* (Remes, 2020a)

> *"Instead of routine recording work, the job of an accountant is increasingly analysing and interpreting numbers, helping the client company management make decisions."* (Remes, 2020b)

The development of automation may not be so rosy from the point of view of all parties concerned. A column written in 2021 by four accounting professionals takes a stand on the *division of labour between software vendors, accounting firms and their clients.* Software vendors market their products to SMEs i.e., directly to the clients of the accounting firms, implying that online financial reporting happens at one click of a button even though in reality such is not the case. The role of accounting firms between the software vendors and clients in solving problems is overlooked. In their column, these representatives of accounting firms considered the accounting software development needs and wrote:

> *"It would be reasonable for us accounting firms also to consider our valuable role in software development and marketing. Turnkey and real-time financial management is possible for us, but they still don't come at the click of a button."* (Backman, Hyvönen, Viertola and Vuorto-Honkala, 2021)

The articles in our data were mostly written by top accounting professionals. Their role and the role of professional journals seem to be to convince accounting professionals that it is important to be progressive in the use of IT innovations. Change in accounting work was always seen as necessary and inevitable, and there was a desire to stay at the forefront of development. Talk about traditional or old-fashioned bookkeepers and reiterated phrases, such as 'getting rid of routines' and 'routines are for the robots' have been important rhetorical means throughout the decades of convincing readers of the importance of adopting IT-related innovations. Things happen 'at one touch of a button' has served as an extreme expression and rhetorical counterpart to routine work.

Keeping up with the developments has been an important argument and other voices have hardly been heard. Accounting professionals have been given new, more demanding consultant and expert roles, although, at the other extreme, the fear of whether robots and artificial intelligence will take the jobs of accountants and payroll clerks has been in evidence. In addition to the new role of accountants, an important question and counter-argument for future developments is the need for and role of all three different parties – software houses, accounting firms, and their clients. What is the role of an accounting firm between the software house and the client in the world of automated financial accounting - when everything is advertized to happen 'by one click of a button". Throughout the ages and with the development of IT technology, changes in the work of accountants have been inevitable, and authors in professional accounting journals have encouraged accountants to accept the change as a *rational choice and forced selection*.

5 Conclusions

5.1 Summary and theoretical contribution

This paper addressed the main arguments, rhetorical means, and perspectives invoked to promote the diffusion of IT innovations in financial accounting. The following four main arguments or discourses were identified in this study: 1) Cost and time savings through IT innovations, 2) IT innovations to reduce administrative burden, 3) Finland as a frontrunner country of IT innovations, and 4) Changes in the nature of accounting work. Throughout the ages, the main argument for promoting different IT innovations has been firmly and primarily based on savings in costs and time. In the first decades, there were *warnings about the dangers of computers and dangerous work combinations*, but on the other hand, investments in ADP were also seen as a *status symbol* and important for reasons of *image* and *competitiveness*.

When the authors and the target audience consist of accounting professionals, it is natural to emphasize economic arguments, such as savings in costs and time. The authors extracted the starting points of their arguments from among the values and arguments already accepted by their readers (cf. Perelman, 1996, 41). However, cost savings, for one, were very tenuously demonstrated. Instead of calculations, cost savings were predicted or estimated in hundreds of millions and billions and often at the level of the national economy, i.e. *unjustified quantification* and *extreme expressions* were used as rhetorical means (cf. Jokinen 1999b, 132–155) to convince readers about the advantages of adopting new technologies. Counterarguments for cost savings were very rare and the costs of IT investments and maintenance were largely ignored in the articles.

Another key argument since the 2000s has been the reduction of the administrative burden, for which digitalization and electronic transfer of information to the public authorities have been seen as a key tool. This argument was often used by representatives of governmental authorities. Digitalization and being free from paper as well as the recent development of automation and robotics for accounting and financial administration tasks were seen as part of a revolutionary future where there is no room for traditional methods. The "*burden*" represents a metaphor for *an oppressive weight.* Digitalization and automation as means to take care of accounting tasks just by "one click" or "a one touch of a button" were presented as ways to reduce administrative burden and costs.

In the last three decades, in particular, articles in professional accounting journals were framed with the idea of *Finland being a progressive and leading country* in IT innovations due to technological and legislative developments. This argument creates a positive atmosphere but also pressure and a necessity to accept the innovations.

Quite a lot of research on changes in the work and role of accounting professionals has been presented in the last few decades. In Finland, these changes have been studied especially among management accounting professionals and business controllers (Granlund & Lukka 1997, Granlund & Lukka, 1998, Järvenpää 2001 and 2007, Tuomela & Partanen, 2001, Vaivio & Kokko 2006). The work of management accounting professionals has developed from that of a historian and watchdog to a consultant and a member of the management team and an agent of change (Granlund – Lukka, 1998, 187). This development has taken place in the context of larger companies.

The changing nature of accounting work described in our data concerns accounting professionals, such as bookkeepers and payroll clerks, primarily in the SME context. With the advent of computers, bookkeepers' manual work turned into pointless routines that were to be got rid of. The debate over reducing routine work and replacing it with consulting and expert work adding value to the clients promotes the idea of being a pioneer and a better professional than a traditional bookkeeper or accountant. Bookkeepers *becoming financial experts and consultants* is a recurring theme in our data. A metaphor referring to the most recent IT developments and automation and to the change in accounting work is that the work can be done at one touch of a button, with just one click. Advanced automation and robotics raise the question of the need for accountants and the division of labour between different parties - accounting-obligated clients, accounting firms, and software operators - to a new level and assessment in the future. While research on the change in management accounting emphasizes the growth of the controller's role, the bookkeepers' work is described as pointless routines, work that needs to be automated, and a new, more demanding 'expert' role emerges in the texts to convince accounting professionals that there will still be a need for their profession in the future.

Overall, a number of rhetorical means were used in the articles. *Referring*, for example, *to public reports and legislative reforms* was one of the rhetorical means used to convince readers about the coming changes in organizing accounting tasks. Another rhetorical means was *quantifying with big numbers* to convince the readers about significant cost savings. The term "burden" is a metaphor as such. A burden is heavy to carry, but thanks to the digitalization development and automation one can take care of the *burden with "just one click"*. "A burden" and "just one click" represent a contrasting pair as the rhetorical means used in the articles. According to Harald (1997, 269), mechanism metaphors are used to create an image of the economy as a machine. In our data "costs are saved", "efficiency is improved", and "administrative burden is reduced" are used as mechanisms without further justification.

As to the perspectives of the innovation diffusion theory used to promote IT- innovations, the arguments above were primarily based on economic reasoning. Arguments such as referring to cost-benefit analysis, improving efficiency, saving time and costs, reducing administrative burden, and eliminating unnecessary manual work are in line with Abrahamson's (1991 and 1996) *efficient choice perspective, wherein innovations are adopted because of the benefits of achieving the organizational goals.* In the accounting information system literature, cost-benefit factors have also been shown to be important in ensuring the acceptance of the information technology stage (for a review, see Afsay, Tahriri & Rezaee 2023).

The other three perspectives were used much less in our data to promote the diffusion of the innovations. However, some of the IT innovations, such as SEPA, which was accomplished through legislation, and TITO, a new payment system that was forcibly introduced by the banking sector, clearly represent the *forced selection perspective.* In addition, over-optimistic prediction of rapid change, for example in the case of e-Invoicing, may have caused some readers to perceive the change as necessary and without alternatives, leading to the inclusion of a *forced selection perspective*. In principle, the IT innovations were mostly based on voluntary adoption, but in professional journals, innovations were presented as an inevitable part of future development. Non-acceptance could be equated with backwardness and therefore the introduction of innovations in professional journals can be interpreted from the forced selection perspective of the innovation diffusion theory.

Our data suggest that the proponents of IT innovations used efficient choice and forced selection perspectives, *not fad and fashion perspectives*. According to Abrahamson (1991, 586), fad and fashion perspectives can be used to explain when and how technically inefficient innovations diffuse. Our data focused on the supply-side of new IT solutions and the future, and therefore no technically inefficient innovations could be identified.

In the supply side of innovation diffusion theory, Abrahamson (1991; 1996) calls those proponents who diffuse innovations management *fashion-setters* and defines them as "organizations and individuals who dedicate themselves to producing and disseminating management knowledge." Fashion-setters disseminate innovations using articles, publications, mass media, etc. (Abrahamson 1991, 608 and 1996, 265). In our data, the authors of the accounting articles represented "top professionals", i.e., were well-known auditors, accountants, and representatives of their respective associations, or governmental authorities and thus could make their voices heard in professional journals. The voices of other potential "fashion-setters" – such as academics, customers of accounting firms or representatives of other external parties were heard much less. Hence, all fashion-setters are not likely to be heard as well in articles published in professional journals. Taken together, the above results contribute to the diffusion of innovation theory by providing insights into the role of professional accounting journals and the perspectives (Abrahamson, 1991 and 1996) used for diffusing knowledge about innovations. Professional journals disseminate information but if only some fashion-setters are given a voice, the information may be excessively optimistic without counter-arguments and any critical views e.g. regarding the costs or continuous changes caused by innovations. Thus, our study supports the idea that the media, including professional journals, construct each subject discussed in particular ways and attempt – consciously or not - to convince the audience of its own version of reality (van Dijk, 1997, Fairclough,1995, Apostol, 2011).

5.2 Practical implications

Regarding the IT innovations in financial accounting, the main discourse of the past 50 years and more in professional accounting journals has been to seek approval for the adoption of new methods starting from the acquisition of a computer and continuing step by step to electronic and automated solutions and robotics. With few exceptions, IT development was highlighted as inevitable. One might claim that the media message has been to accept the change and to inspire confidence in new IT solutions. At the same time, there is evidence that in real life the progress of some of the IT innovations has been much slower than anticipated (cf. Bjørnenak, 1997). For example, e-Invoicing has taken much longer than anticipated to become widespread. The writers are "fashion-setters", proponents spreading the "glad tidings of development" to their audiences. The ideas presented in the articles in the professional journals were topical if not ahead of their time.[9]

5.3. Limitations and proposals for future research

Future research could extend the analysis of the perspectives and arguments used in diffusing IT innovations in financial accounting in several ways. First, while this study was rooted in argumentation and rhetoric analysis and the supply-side perspective of innovation diffusion theory, future studies could scrutinize other theoretical perspectives such as the demand-side perspective of innovation diffusion theory. Second, robotics and artificial intelligence are still mostly among the future developments of SMEs and accounting firms and could hence be considered as future research topics, e.g. from the accounting education (quantity and competence requirements) point of view. Third, focusing on IT innovations excluded several other possible perspectives and discourses from the research, for example, the development of standardization and accounting regulation (cf. Hilling, Sandell, Sonnerfeldt, Vilhelmsson 2023), key actors at different times (e.g. national and international organizations) or technological applications and software houses (cf. Alexandersson et al, 2023). They could be addressed in future research. Fourth, in addition to analysing secondary data, future research should rely on data collected directly from practitioners in the field in order to understand the current practices. Finally, comparative research on the IT innovations of financial accounting could be conducted across countries.

9 For example, in 2021 the share of the electronic financial management of the total financial management market in Finland was estimated to be roughly just over half (Kalliovaara & Lyytikäinen, *Tilisanomat* 2021).

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Lahjoittaminen on tulevaisuuteen sijoittamista – Liikesivistysrahasto tukee apurahoin liikkeenjohtoa palvelevaa tutkimusta, koulutusta ja julkaisutoimintaa.

Aims and Scope

The Nordic Journal of Business is a scholarly journal that publishes original scientific research in all fields of business studies. Different aspects of business theory and practice related, among others, to accounting, corporate governance, entrepreneurship, finance, information systems, international business, management, and marketing are within the scope of the Journal.

The Nordic Journal of Business welcomes submissions of high-quality empirical and theoretical papers that contribute to knowledge of business theory and practice. The Journal is primarily interested in contributions based on the foundational disciplines of business studies, but we also encourage creative approaches and multidisciplinary research that reflects the intricate real- life relationships between functional areas of business. While the Journal provides an international forum for business research, submissions that focus on Nordic research problems or use data from Denmark, Finland, Iceland, Norway, and Sweden are particularly encouraged.

Editorial Policy

The Nordic Journal of Business features:
- Empirical and theoretical research articles
- Survey and review articles
- Research notes

The core of the Journal comprises empirical and theoretical research articles. Comprehensive survey and review articles as well as short research notes will also be considered for publication. The Journal regularly publishes special issues that focus on specific research topics. All submissions are subject to initial editorial screening and are subsequently double-blind refereed by two reviewers who are recognized experts in the field of the manuscript.

About the Journal

The Nordic Journal of Business is an open access journal published four times a year by the Association of Business Schools Finland. The Journal was founded in 1952 and was formerly known as the Finnish Journal of Business Economics. Its audience includes scholars and researchers at universities and business schools, as well as executives and other practitioners interested in the application of research to practical business decisions.

Instructions for Authors and Style Guidelines

The Nordic Journal of Business (NJB) is a scholarly journal that publishes original scientific research in all fields of business studies. The Journal welcomes submissions of empirical and theoretical papers that contribute to knowledge of business theory and practice. All submissions are subject to initial editorial screening and are subsequently double-blind refereed by two reviewers who are experts in the field of the manuscript.

NJB publishes (i) empirical and theoretical research articles, (ii) survey and review articles, and (iii) research notes.

Research articles communicate original scientific research. All submitted research articles are subjected to a double-blind peer-review process. The maximum length of research articles is 10,000 words and double-spaced manuscripts should not exceed 50 pages including the abstract, main text, references, tables, and figures. Survey and review articles are peer-reviewed communications which aim to analyze, synthesize, and summarize recent research topics and themes. The maximum length of survey and review articles is 8,000 words and double-spaced manuscripts should not exceed 40 pages including the abstract, main text, references, tables, and figures.

Research notes are short and concise communications of original scientific research. All submitted research notes are subjected to an expedited double-blind peer-review process after which the manuscripts are accepted as is, conditionally accepted with minor changes, or rejected.

The maximum length of research notes is 2,000 words and double-spaced manuscripts should not exceed 12 pages including the abstract, main text, references, tables, and figures.

1) Submissions to the Nordic Journal of Business should be sent as a PDF or Word file by e-mail to editor@njb.fi
2) There is no submission fee.
3) Manuscripts must be written in English.

4) Manuscripts should be double-spaced with wide margins and 12-pt font size.
5) The title page should contain (i) the title of the manuscript, (ii) author names, professional titles, and institutional affiliations, (iii) an abstract of less than 150 words, and (iv) postal and e-mail addresses of the authors and full contact information for the corresponding author. The title page should be submitted as a separate PDF or Word file.
6) The first page of the manuscript should contain (i) the title and (ii) an abstract of less than 150 words and should not contain any author information in order to ensure anonymity during the peer-review process.
7) The title of the manuscript should be concise and informative.
8) The abstract should contain less than 150 words. The abstract should concisely explain the purpose of the paper and summarize the main findings and conclusions. The abstract should be able to stand alone.
9) The main text of the manuscript should be divided into clearly defined sections and subsections which should be numbered consecutively throughout the manuscript. It is advisable to keep the structure of the manuscript as simple as possible.
10) References should be arranged in alphabetical order. When necessary, references to publications by the same author(s) should be arranged chronologically and multiple references to the same author(s) in the same year must be identified with lower-case letters after the year of publication (e.g., 2015a, 2015b etc.).
11) The reference style used by the Nordic Journal of Business is the following:

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Last name of the author, first name(s) or initials (year of publication). Title of the article. *Name of the Journal* volume number: issue number, page numbers.
Keloharju, M., Knüpfer, S., & Rantapuska, E. (2012). Mutual fund and share ownership in Finland. *Finnish Journal of Business Economics* 61:2, 178–198.

(ii)Books:
Last name of the author, first name(s) or initials (year of publication). *Title of the book.* Edition. Publisher.
Wooldridge, J.M. (2010). *Econometric Analysis of Cross Section and Panel Data.* 2nd Edition. The MIT Press.

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