ORGANIZATIONAL RESILIENCE DEVELOPMENT

A Systematic literature review

Lappeenranta–Lahti University of Technology LUT

Master's Program in Economics, Master's thesis

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Tarja Lindevall

Examiner(s): Professor, Aino Kianto

Mika Vanhala, Associate Professor

ABSTRACT

Lappeenranta–Lahti University of Technology LUT

LUT Business School

Business Administration

Tarja Lindevall

The development of organizational resilience – a systematic literature review

Master's thesis

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65 pages, 13 figures and 15 tables

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Keywords: Organizational resilience, development of organizational resilience, systematic literature review

This master's thesis is a systematic literature review on the development of organizational resilience, focusing on studies published between 2019 and 2023. The aim of the thesis was to identify the latest findings regarding the development of organizational resilience.

The theory section addresses the ambiguous nature of organizational resilience, its expression in three stages, preparedness, endurance and adaptation, and the development and preservation of resilience as a characteristic at the individual, team, and organization levels. Resilience considered as an emergent property, and there is no unambiguous definition for it in the scientific literature. In this thesis the organization's resilience is defined as the ability "to bounce back and bounce forward".

The empirical part of the thesis reviews peer-reviewed studies published between 2019 and 2023, focusing exclusively on organizational resilience as an internal feature of an organization, excluding supply chain and other external factors.

Many of the articles refer to the COVID-19 pandemic, which may explain why studies published between 2019 and 2023 have focused on the development of organizational-level resilience during the survival phase. Key findings of this thesis include the positive impact of dynamic capabilities, digitalisation, and resources on the development of organizational resilience. Based on the thesis, it can also be stated that the research field on the development of organizational resilience is fragmented, partly because research has predominantly focused on the organizational level and on the during / coping phase.

TIIVISTELMÄ

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Organisaatioresilienssin kehittäminen– systemaattinen kirjallisuuskatsaus

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Tarkastajat: Professori Aino Kianto ja Tutkijaopettaja Mika Vanhala

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Tämä pro gradu -tutkielma on kirjallisuuskatsaus organisaatioresilienssin kehittämiseen liittyvästä tutkimuksesta, joka on julkaistu vuosina 2019–2023. Tutkielman tavoitteena oli tunnistaa, mitä uusin tutkimus osoittaa organisaatioresilienssin kehittämisestä.

Työn teoriaosiossa käsitellään organisaatioresilienssin monitulkintaista käsitettä, sen ilmentyminen kolmessa vaiheessa: varautuminen, selviytyminen ja sopeutuminen. Lisäksi tarkastellaan resilienssin kehittämistä ja säilymistä yksilö-, tiimi- ja organisaatiotason ominaisuutena. Resilienssi on emergentti ilmiö eikä tieteessä ole yksiselitteistä määritelmää. Tässä työssä käytetään organisaation resilienssin määritelmää ”palautua ennalleen ja hypätä eteenpäin”.

Tutkielman empiirisessä osuudessa tarkastellaan vuosina 2019–2023 julkaistuja vertaisarvioituja tutkimuksia, joissa organisaatioresilienssin kehittämistä käsitellään ainoastaan organisaation ominaisuutena, toimitusketju ja muut organisaation ulkopuoliset tekijät on rajattu pois.

Moni kirjallisuuskatsauksessa käsitellyistä artikkeleista viittaa COVID-19 pandemiaan ja ehkä siksi vuosina 2019–2023 julkaistut tutkimukset ovat keskittyneet organisaatiotason resilienssin kehittämiseen selviytymisvaiheessa. Tämän tutkielman keskeisinä havaintoina voidaan mainita strategisten resurssien, digitalisaation ja pääoman positiivinen vaikutus organisaatioresilienssin kehittämiseen. Tutkielman perusteella voidaan todeta, että organisaatioresilienssin kehittämisen tutkimuskenttä on hajanainen, osittain siksi, että tutkimus on painottunut pääasiassa selviytymisvaiheeseen ja organisaatiotasoon.

ABBREVIATIONS

HRD	Human Resource Development
IA	Artificial intelligence
IT	Information Technology
LDA	Latent Dirichlet Allocation
LSI	Latent Semantic Analysis
SLR	Systematic Literature Review
SME(s)	Small and Medium Enterprise(s)
VRIN	Valuable, rare, inimitable and substitutable asset
non-VRIN	Generic asset
WoS	Web of Science database

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DECLARATIONS

Turnitin

The originality of this thesis has been reviewed with the Turnitin similarity checking service.

AI usage

The author of the thesis, Tarja Lindevall, used the following AI-tools during the preparation of the thesis:

1. AI tool name *MySLR*
    a. Purpose of use: MySLR was used to import abstracts and lists of keywords from the selected set of articles retrieved from the Web of Science database. In addition, MySLR enabled the analysis of the selected articles using unsupervised machine learning techniques.
    b. Explanation of the use of the tool: The number of articles identified in WoS with the chosen search criteria was too large to process manually. MySLR is specifically designed to support academic literature reviews in the management and organization studies, where the volume of published research has increased significantly in recent years.

Responsibility

The author, Tarja Lindevall, takes full responsibility for the content of this thesis and has reviewed and edited the content generated by the use of AI tool.

1 Introduction

Organizational resilience and its development are highly topical due to the rapidly changing business environment (Mitsakis, 2020). We have witnessed numerous natural and human caused disasters, political conflicts and epidemics (Zhang et al. 2022). Organizations' survival and development are threatened by various crisis (Shao & An 2022). Organizations must be able to react to changes and recover rapidly (Zhang et al. 2022). While some organizations succeed despite the challenges they face, others struggle to cope. In a dynamic environment, survival and growth are objectives for organizations (Chen et al. 2021). Organizational resilience plays a key role in helping organizations respond to and recover from crises (Chen et al. 2021). But how is organization's resilience developed? Recent research on this topic seems to be limited, and this thesis, a systematic literature review, aims to gather latest research.

Resilience has been researched in multidisciplinary perspectives and originally comes from ecology and ecosystems (DesJardine et al. 2019, Matysek-Jędrych et al. 2022). In ecology the term refers to an ecosystem's ability to survive and recover from disturbances (DesJardine et al. 2019). Since then, the concept of resilience has expanded to various fields such as business, psychology, sociology, and engineering (Chen et al. 2021, DesJardine et al. 2019. Zhang et al. 2022). The research on organizational resilience has increased in the last 30 years (Chen et al. 2021).

This thesis is a systematic literature review of peer-reviewed articles on the development of organizational resilience, focusing on publications from 2019 to 2023. The research question of this thesis is: "What does the latest research disclose about the development of organizational resilience?" The thesis is conducted as a literature review. The literature review is partly conducted with an AI tool MySLR platform. The tool helps organize and analyse literature from databases such as Web of Science and Scopus. In this thesis, only articles categorized under "Management" in Web of Science (WoS) are used as research material. Studies from fields like psychology, sociology, or environmental sciences are excluded. The initial review indicated that, maybe due to COVID-19, there is a substantial amount of new research on organizational resilience in general and in contexts of supply chain, but only a few studies seem to focus on the development of organizational resilience.

1.1 Previous research

There are some systematic literature reviews on organizational resilience. Zhang et al 2022 article "Organizational resilience in development: A Systematic review based on bibliometric analysis and visualization". In this study the group of researchers used a bibliometric analysis tool to analyse 622 journal articles in the past 20 years (2003-2022). This study indicates that there will be significant growth trend in organizational resilience research from 2015 onwards and predicts that the number of published articles will increase to 184 in 2022. The survey covered journal articles from different fields such as Sustainability, Safety Science and Environmental Research and Public Health as well as Business Strategy and The Environment.

Kunz and Sonnenholzner (2023) have published a systematic literature review of the relationship between managerial overconfidence, confidence as a personality trait, and organizational resilience. The study indicates that there are three types of resources that are affected by managerial overconfidence related to organizational resilience, namely material, social, and procedural resources. Another recent systematic literature review covers psychological resilience and leadership (Yu et al. 2022), and another by Ershadi et al. (2022) focuses resilience measures, with a perspective on the construction management discipline and individual competencies.

Recent single studies on organizational resilience seem to have focused on the impact of the COVID-19 pandemic and supply chain management or both, publications like "Analysis of factors impacting firm performance of MSMEs: lessons learnt from COVID-19" (Baral & Mukherjee 2021) of the micro, small and medium enterprises (MSMEs) challenges during covid and presents how four constructs (flexibility, collaboration, risk management culture and digitalization) combined with organizational resilience has an effect on company's performance. Aman and Seuring's study "Analysing developing countries approach of supply chain resilience to COVID-19" (2021) on supply chains disruptions as significant issues for emerging societies and how social capital and supply network play crucial role in making supply chain resilient. There are other recent publications of COVID-19 pandemic and organizational resilience, such as Fu et al (2022) about the relation between organizational resilience and local business environment and Ewertowski and Butlewski's (2021) article of determining the state of organizational resilience using risk control

measures related to Covid-19. Disasters are factors also for example in. Mendiola et al article "Building organization and employee resilience in disaster contexts" (2019) and dos Santos et al publication "Roadmap for the development of a resilience indicator system for protection and civil defence organizations: A literature review of the evidence" (2019)

There are several recent studies of employee resilience, such as the study of the role of human resource practice in developing employee resilience (Khan et al. 2019), Senbeto et al (2021) recent study of employees' resilience development in technologically turbulent environments, the study on the development and validation of a measure of employee resilience (Näswall et al. 2019), and in the development of resilient leadership, such as Zhang et al. (2023) study of resilient leadership in hospitality industry, Duchek et al. (2022) study of the development of women leaders' resilience and Förster et al. (2023) study on healthcare leaders' resilience.

There seems to be very few studies published on the development of organizational resilience in past five years, one of the few is Mishra et al. (2022) Managing Tensions in Resilience Development: A Paradox Theory Perspective on the Role of Digital Transformation." This study is grounded in paradox theory, and the study explores four types, learning, organising, belonging, and performing, of paradoxes that organisations face when developing resilience. This study offers organizations support in reforming their strategies for creating resilience, and it has major impact to manufacturing organizations in managing their operations more efficiently.

Although Zhang et al 2022 study indicated that there will be increase in the number of studies on organizational resilience, there seems to be no resent systematic literature reviews of the development of organizational resilience.

1.2 Objectives and the research question of the study

The purpose of this thesis is to identify relevant research literature and analyse the findings of selected research literature. The main objective is to gain knowledge about the development of resilience. The findings can be used to raise awareness of this current topic, as well as to develop processes and resources that support the development of organizational

resilience. Additionally, the findings may help to identify potential research gaps. The research question of this thesis is “What does the latest research disclose about the development of organizational resilience?”

1.3 Exclusions and limitations

Organizational resilience is an interdisciplinary concept, but this thesis empiric data focuses exclusively on the articles from Management -category in WoS. Factors and actors outside the organization, except for change as an instigator, are excluded from the scope of this thesis. Entrepreneurship and project resilience are also excluded. Organizational resilience is a multidimensional feature that resides within the organization as thew individual, team, and organizational levels. The fourth dimension, systemic resilience, is not within the scope of this thesis and is therefore excluded.

This thesis’s empiric data consists of peer-reviewed articles published between 2019 and 2023 and are available in WoS.

1.4 Theoretical framework

Literature review focuses on organizational resilience development as both a transactional and transformational phenomenon. Organizational resilience develops when environmental factors change, or organization itself undergoes a change. While it is possible to strengthen existing resilience without significant changes, this is not relevant in the stable situations. Change, either internal or external, of the organization is addressed only superficially, as its role is primarily as an instigator in the development process and the change itself is not significant. Organizational resilience and its characteristics are discussed, but the literature review emphasizes the traits and the capabilities an organization should possess to develop resilience.

This theoretical framework provides a basis for literature review and guides the analysis to answer the research question presented in this study. The figure 1 below illustrates the theoretical framework of this study.

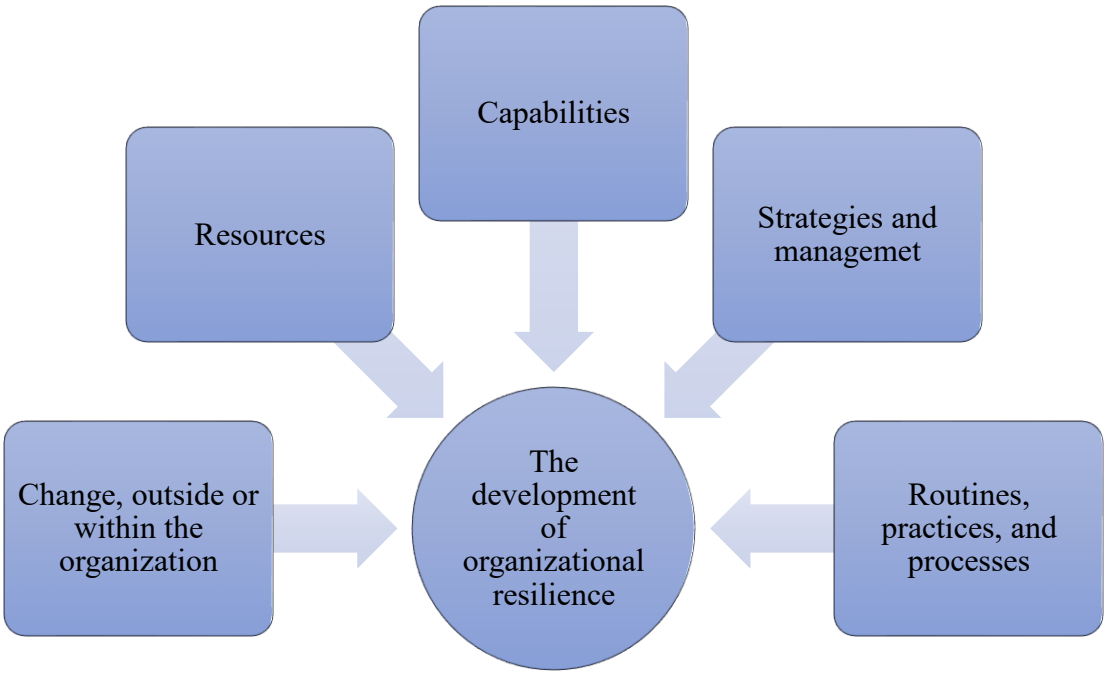

Figure 1. Theoretical framework

Theoretical framework is based on organizations traits and capabilities, which tender to the development of organizational resilience.

1.5 Structure of the study

This thesis consists of six main chapters. After the introduction, the framework of the thesis is presented. The second chapter introduces the core concepts and the theoretical foundations of organizational resilience and the development of organizational resilience. The third chapter describes the systematic literature review, the tool used in this thesis, and the process for selecting the articles. The findings of the literature review are presented in chapter four, including both descriptive and thematic findings. Chapter five discusses the limitations, findings and contributions, of this study. The structure of the study is illustrated in the figure 2.

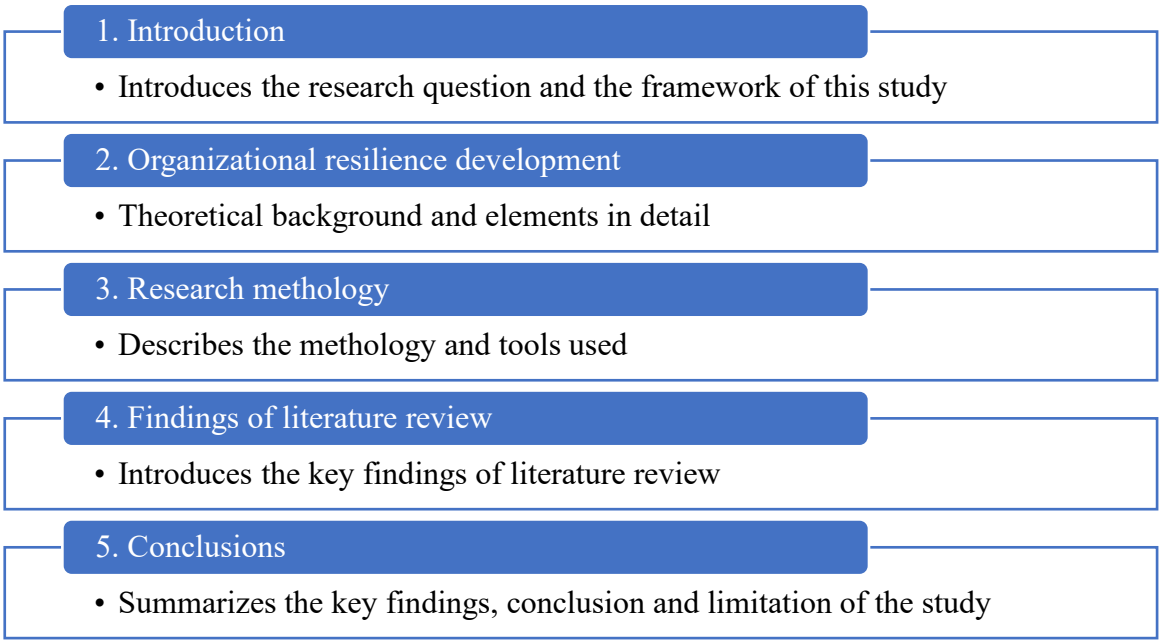

Figure 2. The structure of the study

2 Organizational resilience

This chapter provides a detailed overview of the theory of organizational resilience, including its various definitions and dimensions. The first sub-chapter examines the three dimensions, (individual, team, and organizational level) addressed in this study, as well as the key elements and categories of organizational resilience. The second sub-chapter discusses indicators of organizational resilience, and the final sub-chapter focuses on the development of organizational resilience.

Organizational resilience has been defined in many ways, with its conceptualization varying by field, period, and context. Definitions of organizational resilience include perseverance, recovery abilities and strength, these are attributes that can help organizations cope with and recover from challenges. However, resilience can also have negative connotations if it is associated with rigidity.

ISO standard 22316(2017) Security and Resilience defines organizational resilience as: "*Organizational resilience is the ability of an organization to absorb and adapt in a changing environment to enable it to deliver its objectives and to survive and prosper."* According to the standard, improving resilience is not only a strategic goal but also an outcome of good business practice and effective risk management. This definition combines the two-fold nature of organizational resilience, it is static (survive) and active (prosper).

In fast-paced and constantly changing marketplaces companies must not only to adjust but also thrive and develop as they face and overcome challenges (Lengnick-Hall et al. 2011). These challenges may arise from within or outside the organization, often leading to unexpected effects. Organizations need to be able to deal with all the unforeseen events. (Duchek 2020) Organizational resilience enables companies to bounce back from difficulties and continue their operations. It also allows them to seize new opportunities and develop new capabilities. (Lengnick-Hall et al. 2011) Promotion of competence, restoration of efficiency and encouragement of growth are traits of resilient organizations (Vogus & Sutcliffe 2007).

Organizational resilience has a multilevel framework, it appears as individual, team and organizational level. At the individual level, it refers to in individual capacity, at the team-

level capacity, to collective capacity and at the organizational level, to the organizational capacity (Raetze et al. 2021). At its core, resilience relies on the understanding the environment, on the ability to generate strategic options, and on the capability to realign resources faster than competitors. These capabilities create competitive advantages to the organizations. (Hamel & Välikangas, 2003) According to Linnenlucke et al. (2015) not only organizational resources and capabilities determine resilience, but it is also interrelations and interactions that organizations have with other entities like supply chain, as organizations do not operate in isolation.

Organizational resilience literature has been influenced by five different disciplinary perspectives: strategic, positive psychology and organizational development perspective, resilience engineering perspective, safety and reliability, and ecological perspectives (Hillmann 2021). In social-ecological systems, resilience thinking focuses on three topics: persistence, adaptability, and transformability (Folke et al. 2010). Additionally, organizational resilience can be viewed from three main perspectives: resistance and recovery, adaptation, and anticipation (Duchek 2020). Organizational resilience is the organization's capability to reconfigure resources and processes, renew relationships, recover from crises, and achieve growth (Chen et al. 2021). It is an emergent property that resides in the organization's infrastructure, procedures, parameters, systems, structures, and individuals (Burnard et al. 2011).

Annarelli and Nonino's (2016) definition "*Organizational resilience is the organization's capability to face disruptions and unexpected events in advance thanks to the strategic awareness and a linked operational management of internal and external shocks. The resilience is static, when founded on preparedness and preventive measures to minimize threats probability and to reduce any impact that may occur, and dynamic, when founded on the ability of managing disruptions and unexpected events to shorten unfavourable aftermaths and maximize the organization's speed of recovery to the original or to a new more desirable state*." combines strategic thinking and operational management in the context of organizational resilience. Limnious et al. (2014) study defines resilience as "*a magnitude of disturbance the system can tolerate and still persist".* They argue that resilience should not be an objective, but rather a desirable or less desirable system attribute.

Duchek (2020) divides the organization's resilience-defining capabilities into three categories, Anticipation, Coping, and Adaptation capabilities. These correspond to the three

stages before, during and after unexpected events. Anticipation capabilities involve recognizing early warning signs and preparing for potential crisis. Coping capabilities refer to accepting what has happened and implementing solutions to address the situation. Adaptation capabilities focus on reflecting and learning from experience, which enables the organization to change and improve its resilience over time. Learning generates knowledge that supports organizational learning and resilience. The following table summarizes these three categories.

Table 1. Three categories of organizational resilience

Before	During	After
Anticipation	**Coping**	**Adaptation**
Preparenes Observation & identification skills Ability to develop resources	Acceptance Developing and implementing solutions	Reflection and learning

Modified Duchek (2020)

Lengnick-Hall et al. (2011) state that some basic organizational attributes such as flexibility, agility, and adaptability, share some elements with resilience but have different origins and outcomes. Organizational resilience is triggered by unexpected events and involves renewal from the inside out. In contrast, flexibility, agility, and adaptability are part of the organization's ongoing strategic capabilities, with an emphasis on responding to the external environment (outside in).

According to Legnick-Hall et al. (2011) organizational resilience is more than restoration, it includes organization's capabilities to keep pace, create new opportunities and develop capabilities. Burnaed et al. (2011) define resilience as "*an emergent property that relates to the inherent and adaptive qualities that enable an organisation to take a proactive approach to threat and risk mitigation*". Linnenluecke (2017) indicates that, in addition of being a feature, organizational resilience is an outcome of recovery attempts and learning, and that it is not exactly defined. Duchek (2020) states that there is no consensus about definition or composition of resilience. Vogus & Sutcliffe (2007) shows that organizational resilience is a collection of capabilities, independent of learning, yet it relies upon past learning and

supports future learning. Bartuseviciene et al. (2022) propose two-fold approach to defining organizational resilience, bounce-back and bounce-forward. Bounce-back part is the organization's ability to prepare for and adapt to crisis, consisting of leadership, networks, and culture, and is crucial to the second part, bounce-forward. Bounce-forward uses the experience from bounce-back to increase organizational competencies.

This thesis uses Bartuseviciene et al. (2022) definition of organizational resilience as an ability to bounce-back and bounce-forward.

2.1 Dimensions of organizational resilience

Organizational resilience resides in the organization as individual, team, and organizational, level resilience (Raetze et al. 2021; Chen et al. 2021). Borg et al. (2022) divide the same levels as in organizational theory to be micro (individual), meso (team, project, and group) and macro (organizational) level. The classification to individual, team, and organizational level is used in this study.

Individual level resilience can be seen as psychological resilience, individual capability to respond positively to difficult circumstances (Borg et al. 2022) and as an ability to establish relationships with key resource holders. (Lengnick-Hall et al. 2011). A resilient individual has problem-solving skill, strong faith, affirmative perceptions, and positive reinforcement. (Lengnick-Hall et al. 2011).

Team level resilience has been defined as team-level capacity to respond to and bounce back from misfortune events. It requires team processes; team composition and contextual factors contribute to team resilience and enables team resilience to be an emergent state (Hartwick et al. 2018). Resilient teams have four characteristics in common: Psychological safety, belief in success in given tasks, capability to adapt and improvise, and common mental model for cooperation (Borg et al. 2022).

Organizational level resilience is organization's ability to maintain its operations, that is achieved though positive responses to misfortune events that further establishes resourcefulness in commitment. (Borg et al. 2022). An organizations capacity or ability to effectively handle crisis, resist disturbances, and recover after misfortunes is seen as resilience (Raetze et al. 2021).

Lengnick-Hall et al. (2011) study presented four (4) contextual elements of organizational resilience; these are:

- Psychological Safety: Interpersonal risks are required to gain organizational resilience. Risks include for example appearing ignorant as asking for guidance or seeking information or be seen as incompetent when admitting mistakes. Interpersonal risks can be taken in an organization that nurtures climate for psychological safety.
- Social Capital: Social capital evolves with respectful interactions that further enables collaborative sensemaking. Social capital enables the sharing of tacit information and building cross-border networks of support and resources and eases collaboration.
- Diffused Power and Accountability: Resilient organizations rely on self-organization, share decision making and accountability widely, they are not managed in hierarchical manner. They are capable of learning and changing their behaviour according to changes that have happened.
- Resourcefulness in Networks: Strong networks enable organizations to ensure social capital beyond its own boundaries and flexible resources. These can promote innovations and support resilience development. creation of resilience

These four elements do not create resilience, but they are the key elements in the creation of resilience. Resilient behaviours and attitudes can develop when these elements are present. (Lengnick-Hall et al. 2011)

Tasic et al. (2020) states that organizational resilience resides in the organization as external, the environmental, and as internal, individual, and organizational resources. Due to crisis, namely environmental stimulation, the organization needs to react, that is to adjust, or transform, during the crisis redefinition. Outcome of this process is organizational learning; organizations capabilities have strengthened. Internal crisis is seen as internal affair and only external crisis is seen as environmental.

Limnios et al. (2014) article introduces RAF, the Resilience Architecture Framework. RAF is based on model of organizational typologies and combines different research streams, like dynamic capabilities and organizational rigidity. RAF explores the interaction between the manifestation of resilience and the desirability of the state of the system. The authors notices

that high level of resilience, the level of resilience can be of high or low level of desirability, depending on the state of the system. Following figure illustrates the interactions between resilience occurrence and the state of the system.

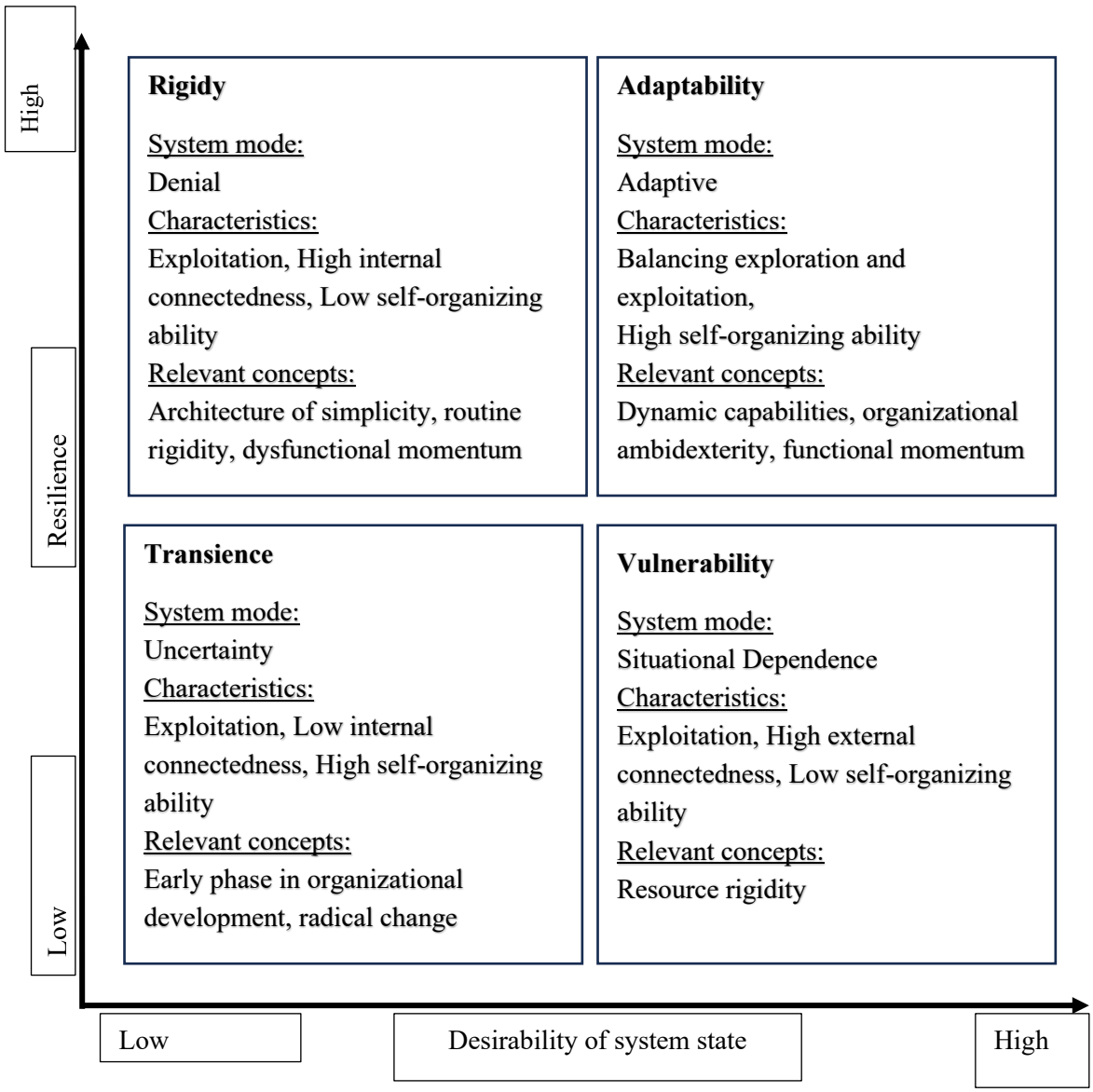

Figure 3. The Resilience Architecture Framework. (RAF), Modified Limnios et al. (2014)

Chen at al. (2021) study of six highly resilient companies identified five core categories of organizational resilience, these are Capital Resilience, Strategic Resilience, Cultural Resilience, Relationship Resilience and Learning Resilience. The study showed that together

these five factors formed the organizational resilience thar enabled organizations to cope with crises and to achieve sustainable growth. Figure 4 demonstrates the five factors of organizational resilience.

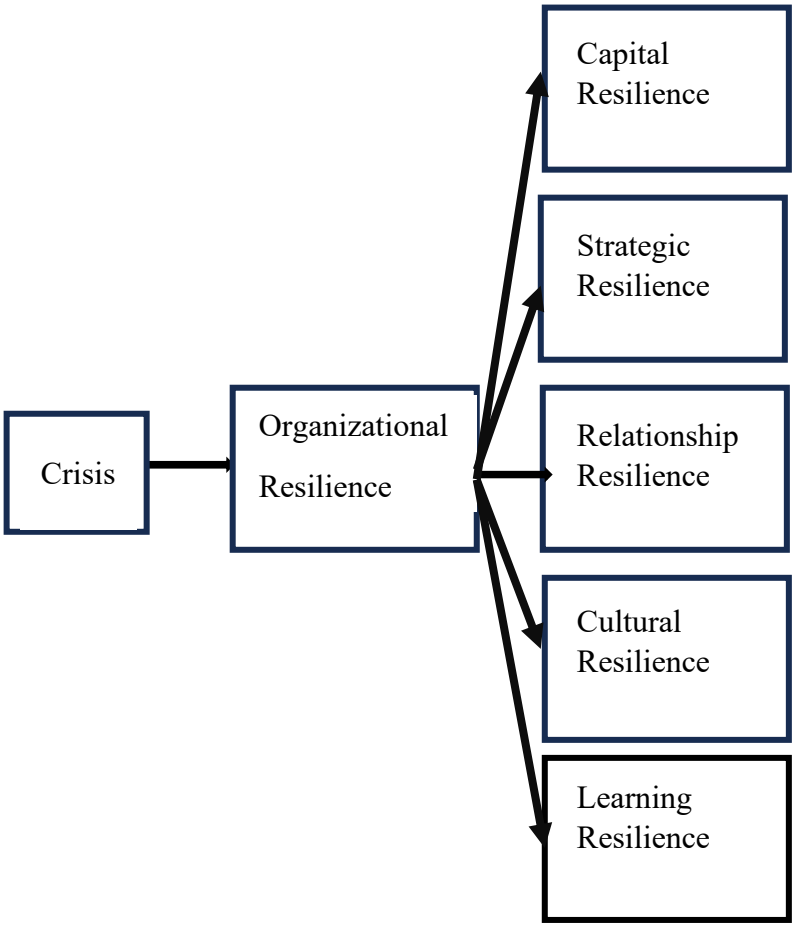

Figure 4. The organizational resilience process, modified Chen et al. (2021)

During crises, capital resilience enables organization to continue its operations normally and recapitalize against risks. Strategic resilience refers to organization's capability to maintain strategic consistency, choose suitable growth model and to be able to identify and eliminate harmful factors. Relationship resilience is found in organizations and its stakeholders' reciprocal relationships. Cultural resilience refers to employee – employer relationships, corporate culture, employee engagement and employee's entrepreneurial attitude. Learning resilience is organization's capability to cope with the stress and challenges of learning. This

study was conducted among companies in technology, service, and manufacturing industries, and due to the multidimensional structure of organizational resilience, the main factors of organizational resilience might differ in other industries. Outcome of major factors might also be different in different crisis, as the business environment is constantly evolving, and crises organizations face vary (Chen et al. 2021).

Chen et al. (2021) note that due to the multidimensional structure of organizational resilience these five categories might not be applicable to other industries as the ones covered in the study.

2.2 Indicators of organizational resilience

Kantur & Say (2015) study resulted in three-dimensional scale for measuring organizational resilience. According to this study, organizational resilience can be measured by robustness, agility. and integrity. In this study robustness refers to a capacity to endure and recover from unfavourable circumstances, agility refers to the organization's ability to react quickly, and integrity is seen as organization’s employees’ cohesion during challenging times.

Matos et al. (2022) divide the indicators of organizational resilience into six topics, which are:

- The Strategy: Resilience should not be seen as defensive strategy, but as positive and future-oriented “strategic enabler”. Being initiative-taking and flexible, taking advantage of new opportunities, creativity and anticipating qualities are traits of resilient organizations.
- The Culture: Resilience is based on organization’s values, behaviours, culture, and ethos. Leadership promotes the culture, but the culture to be relevant, it must rotate from the top (leadership) to the bottom (employees) of the organization and back to the top. To be successful, the culture needs to be willingly integrated by all in the organization.
- The Organizational Learning: To be resilient is to deal with occurrence, not the occurrence. Resilient organizations are willing to learn from not only their own experience, but of experience of others, to for example. seek opportunities and launch

innovative products and processes. Adaptability, agility, and competitiveness are attributes that are found in resilient organizations.

- Dynamism and Statism: Dynamic resilience is needed to conquer unexpected risks and threats and is based on dynamic resources. Static resilience is based on the management of internal and external resources and deals with strategic resilience initiatives. Dynamic and static resilience can be seen as proactive and reactive resilience, and they can coexist. As dynamic (proactive) resilience is organization's ability to recover and static (reactive) is the ability to be increase the level of preparedness to potentially harmful situations.
- Leadership: Organizational resilience and leadership capabilities have correlation, the more skilled and resilient the leaders, the more resilient the organization. Strong leadership promotes work engagement, and resilient individuals tend to have positive impact on their work environment, for example dealing with stress and with a generally positive attitude.
- Adaptive Capacity: Resilient organizations are capable to adapt to minimize damages caused by the change. Adaptivity is related to proactive and reactive resilience, adaptivity is the capability to be proactive (pre-event) and active (post-event).

Proactive and reactive resilience can be found in two of the important indicators, in Dynamism and Statism and in Adaptive Capacity.

2.3 Organizational resilience development

The creation and dynamic management of resources, such as cognitive, emotional, relational, and structural, is needed in building resilience. Resources help organizations deal with and learn from unexpected situations, and they need to be sufficiently adaptable, storable, convertible, and flexible. (Vogus & Sutcliffe 2007) Organizational resilience develops through a combination of organizational-level, cognitive, behavioural, and contextual capabilities and routines. To develop resilience, organizations need specific capabilities, routines, practices, and processes, that enable organizations to adjust and help them move forward. (Leghnick-Hall et al. 2011)

According to Hamel ad Välikangas, 2003, resilient organizations must to able to renew their production, products, and services. Renewal is a result of resilience, rather than defending the past, organizations should be focusing on the future. The goal should be “zero trauma”, as in a genuinely resilient organization, challenger brings excitement rather than trauma.

To be resilient, organization must address four challenges:

- The Cognitive Challenge: The company must avoid denial, nostalgia, and arrogance. In addition, it must be deeply aware of what is changing in its environment and be constantly prepared to consider how these changes are likely to affect its current success.
- The Strategic Challenge: Resilience requires alternatives and awareness – the capability to create new and compelling options to outdated strategies.
- The Political Challenge: Organization must redirect resources from yesterday’s products and programs to those needed in the future, which requires developing the necessary capital and talent to support experiments needed.
- The Ideological Challenge: Optimization is becoming irrelevant as it cannot secure organizations’ future. Organizations should embrace constant renewal, instead of episodic and crisis driven, and incorporate it to operational excellence and immaculate operations.

Few organizations have fully overcome these challenges, Hamel and Välikangas (2003) propose four points to start building resilient organization. These points are: Conquer Denial, Value Variety, Liberate Resources, and Embrace Paradox.

- Conquer denial: Organizations must not live in denial, as renewal is impossible in denial. Senior management should be aware of changes. Organization must locate and attend to the personnel, that can detect the possibilities future hold for organization’s business model. Organizations must also accept that their current strategies will eventually become obsolete.

- Value Variety: The greater the variety within an organization, the more ways it has to cope. This includes variety in products, services and strategies, which foster new developments and projects,
- Liberate Resources: Resilient organizations need to fee up both monetary capital and, more importantly, human resources to support change, innovation, and projects, and even alternative strategies. These resources should be allocated flexible to enhance resilience, rather than being tied in rigid manner.
- Embrace Paradox: The paradox in building resilience is the need to be efficient and productive. Optimizing does not allow for free resources and those are needed to be resilient. Organizations need to allocate as much attention and resources to perpetual renewal as they have used to assemble the grounds for operational efficiency.

Hamel and Välikangas (2003) emphasize liberating resources, such as capital and human resources, Pal et al. (2014) identify five categories of resources essential to develop resilience: material, financial, social, network and intangible resources. Their study, focused on small and medium sized enterprises (SMEs), highlights the following key enablers of organizational resilience:

- Financial resources: cash flow and investment finance are critical, disruptions in cash flow, changes in creditor policies, or limited investment reserves weaken the organization capabilities to cope and recover.
- Relational networks: Close relationships with customers, suppliers and marketing partners correlate with resilience development.
- Material assets: Excessively high inventory of raw materials or finished products, combined with fluctuations in demand, can impact profitability, sales-turnover and leverage ratios.
- Strategic flexibility: Flexible decision-making is not only critical asset during crises but also key enabler to resilient performance.
- Operational flexibility: Operational and structural flexibility can improve profitability and cash flow, thereby develop resilience.

- Continuous improvements: Quality and efficiency of production, operational agility and continuous improvement foster resilience and cater to customers' needs.
- Learning and cultural aspects: Features such as entrepreneurial culture, informal and fast decision making, are deeply ingrained in organizations and should be leveraged to develop resilience.

Other factors, such as exchange rate fluctuations, can also enable resilience growth in an organization. Organizational resilience development in crisis relies not only on financial resources, like cash flow and investments, but also on relational networks, material assets, strategic and operational flexibility, continuous improvements, learning and cultural aspects and set of strategic and operational initiatives. Resilience is developed by tuning organization's strategic assets and capabilities and relies on continuous development. (Hamel and Välikangas (2003)

Developing resilience requires time, long term strategic design, detailed planning, and effective measures. Chen et at. (2021) introduce four features that enable organizations to develop their resilience:

- Implementing lean strategy to build strategic resilience: Organizations need clear vision and mission to set defined goals. Employees can develop their own skills to match the skills needed to meet the set goals, competencies and goals must be compatible.
- Upholding sturdy capital to shape capital resilience: In a crisis it is vital to have sufficient reserve of cash flow. Companies that struggle with finances are more likely to face difficulties with setbacks.
- Maintaining reciprocal relationships to gain relationship resilience. During crisis, employees are the most important resources that an organization has. Other stakeholders, such as customers and investors, are also important for recovering from a setback.
- Implementing a culture of excellence to build cultural resilience. Content employees work harder, and commitment fosters stable development. During crisis happy employees are willing to help to deal with setbacks.

3 Research methodology

This chapter describes the methodology used on this research. First, the data and its limitations are presented. Second, the data collection and processing methods are explained. Third, the analytical methods and tools used in the study are presented.

3.1 Data and limitations

The data used in the study were collected in January 2024 from the Internet platform Web of Science (WoS). WoS is a platform that provides access to multiple databases containing reference and citation data from academic journals, conference proceedings, and other documents in various academic disciplines. Clarivate plc, an international publicly traded analytics company, owns the WoS platform. (Clarivate). WoS is accessible via the LUT Primo, a service provided by LUT University Library. (LUT Primo) The platform contains more than 190 million records dating from 1864 onwards, in 254 subject categories (Clarivate2).

The initial search for articles in WoS was conducted in late December 2023. Due to the vast number of articles available in WoS, the research was limited to include publications from years 2019 to 2023. After the initial retrieval, the search was further refined to include only peer-reviewed and review articles in the WoS category “Management”.

The first search included peer-review and review articles that had the words *organi** *resilien** AND *develop** in the topic field, published between 2019 to 2023, and categorized under “Management” in WoS. This search yielded 643 articles. The second search focused on the articles with same the keywords, *organi** *resilien** AND *develop** specifically in their title field, with the same publication years and category. The search returned six (6) articles. The following table presents the process of defining and refining the search terms.

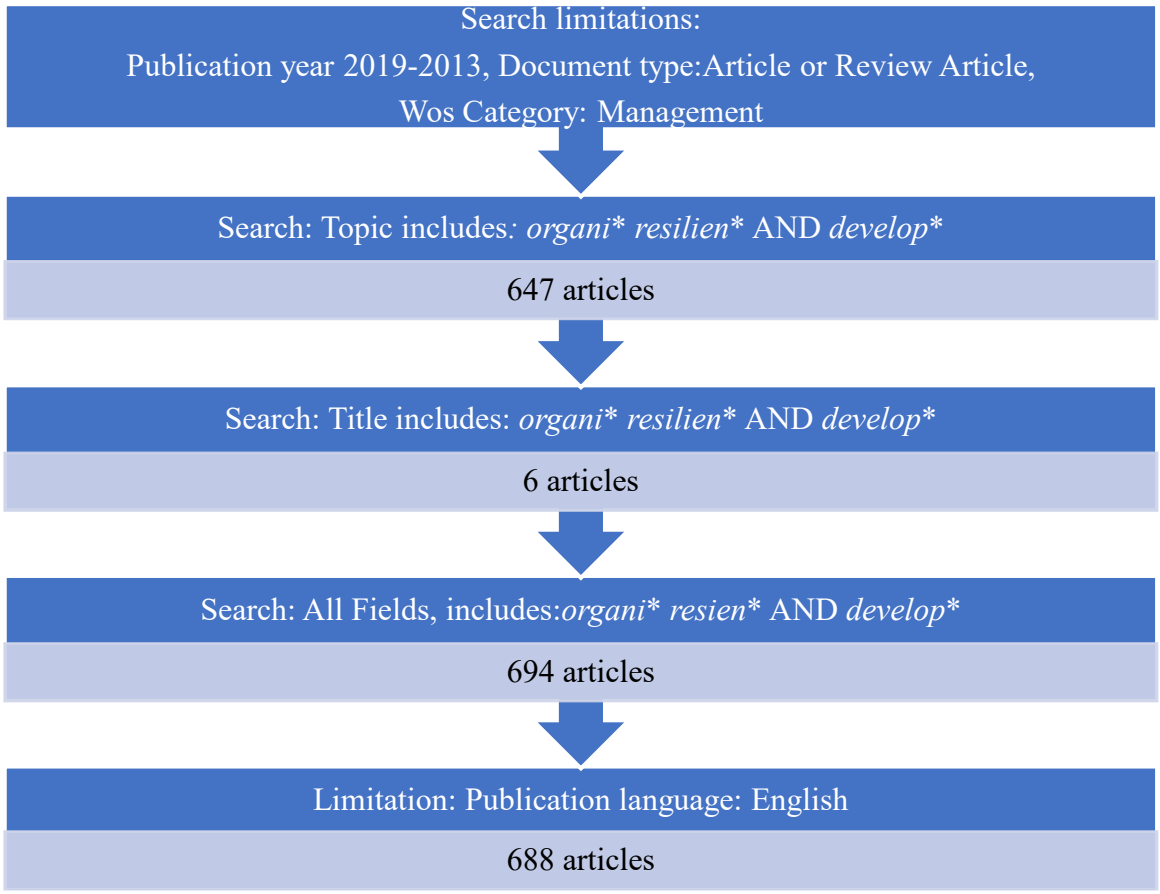

Figure 5. Process of defining search terms

3.2 Analytical methods and tools

The initial analysis of the 688 articles was conducted using the AI tool MySLR. MySLR is an online platform, created by Salvatore Ammirato and Daniele Rogano at the University of Calabria, which supports Systematic Literature Reviews (SLRs).

Systematic Literature review (SLR) is an independent study that covers published literature on the subject. It may identify gaps in the literature and aids in finding research gaps. The format and purpose of a SLR can vary greatly, from critical evaluation of the literature to exploratory and descriptive pieces. The method can be used to examine data, methodologies, findings, or assess theories, themes, or constructs. With the SLR, it is possible to provide summaries of research topic or assess related topic and interdisciplinary work. (Kraus et al, 2022) The expected result of using a SLR is to create complete, correct, and reliable

knowledge, which can be challenging to achieve, especially in organizational and management sciences (Ammirato et al, 2023).

The MySLR tool is a platform that enables the digital processing of a high volume of literature used in systematic literature reviews. (Ammirato et al, 2023) The SLR process is presented in the following figure.

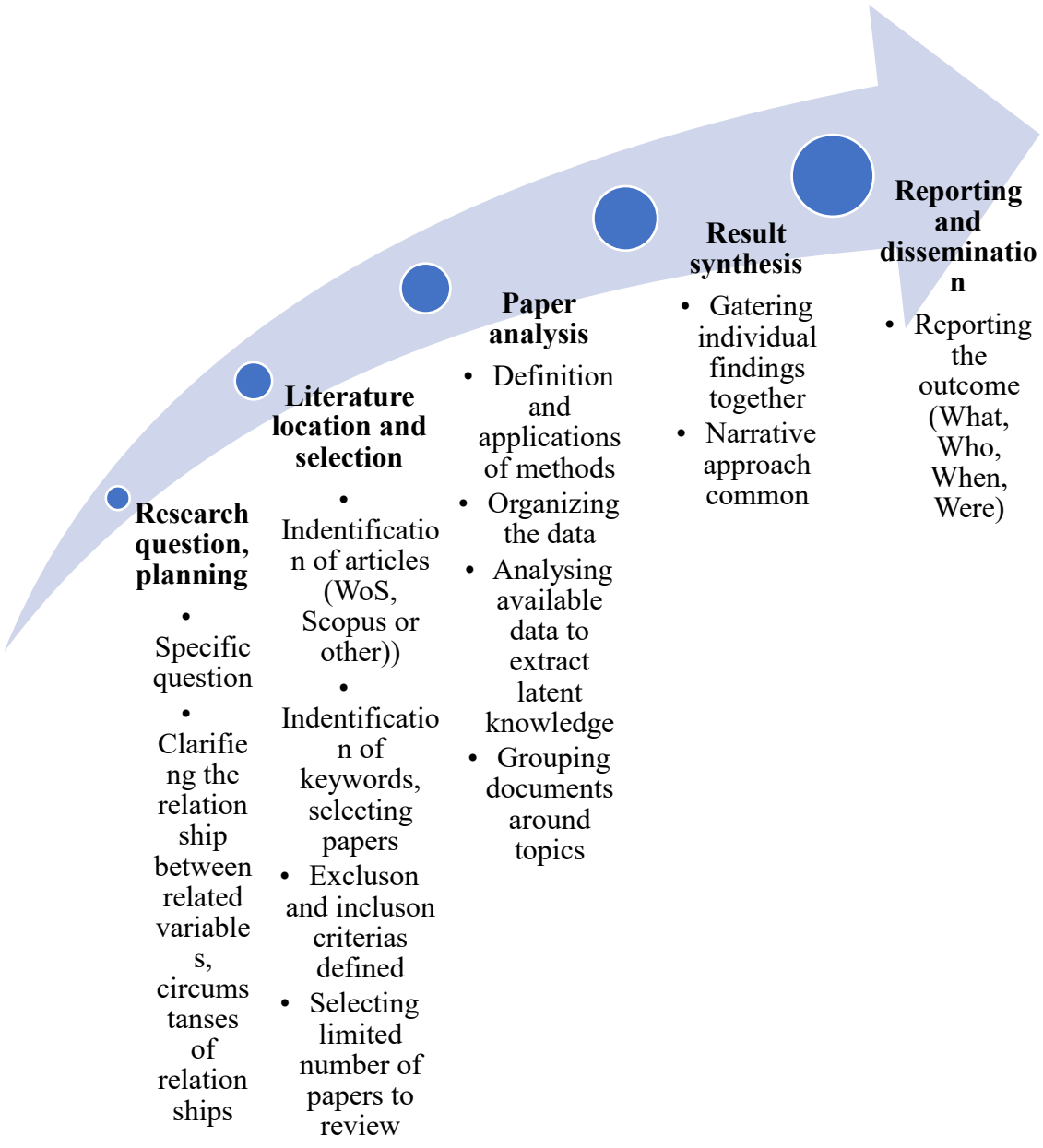

Figure 6. SLR Process, (adapted Ammirato et al, 2023)

The MySLR tool can conduct effective SLRs in organizational and management sciences, as it is able to overcome the limitations of other available tools. Search results from for example Web of Science can be uploaded to MySLR and the tool performs the initial analysis of the dataset. After the initial processing of the dataset, MySLR produces a list of keywords. The list of keywords can be altered, and MySLR also suggests new lists of keywords. In the paper analysis phase, MySLR supports analysis and classification of papers and dataset can be elaborated with two different algorithms, Latent Dirichlet Allocation (LDA) and Latent Semantic Analysis (LSI). LDA is based on machine learning techniques and LSI in text mining techniques. MySLR also suggests the most suitable algorithm for the dataset. (Ammirato et al, 2023)

In the paper synthesis phase MySLR supports the examination of individual studies and supports the exploration of relations between studies, The paper synthesis phase reduces the time spent on organizing and sorting research papers compared to conventional methods, and no other tools, such as spreadsheets, are needed. (Ammirato et al, 2023)

In the result synthesis phase MySLR visualises the topics for example by:

- Graphical and textual form of the most representative keywords
- Frequency and weight of the keywords
- Dominant topic of paper and probability of association of the paper to the dominant topic
- The number of documents by dominant topics
- The algorithm’s perplexity and coherence values

The statistical measure “perplexity” predicts the probability of model within the samples. (Ammirato et al, 2023)

This thesis is a literature review with the intention of exploring existing articles, their findings and describing new research results of organizational resilience development. There is no intention to widen the scope of this thesis from management -category literature to interdisciplinary data.

3.3 Data collection and processing

The data collected for this thesis are from database Web of Science (WoS). The initial dataset consisted of a list of search results of WoS, collected in January 2024. Data processing involved both the use of AI MySLR and manual screening. The process is presented in the following figure and described in more detail in the following paragraphs.

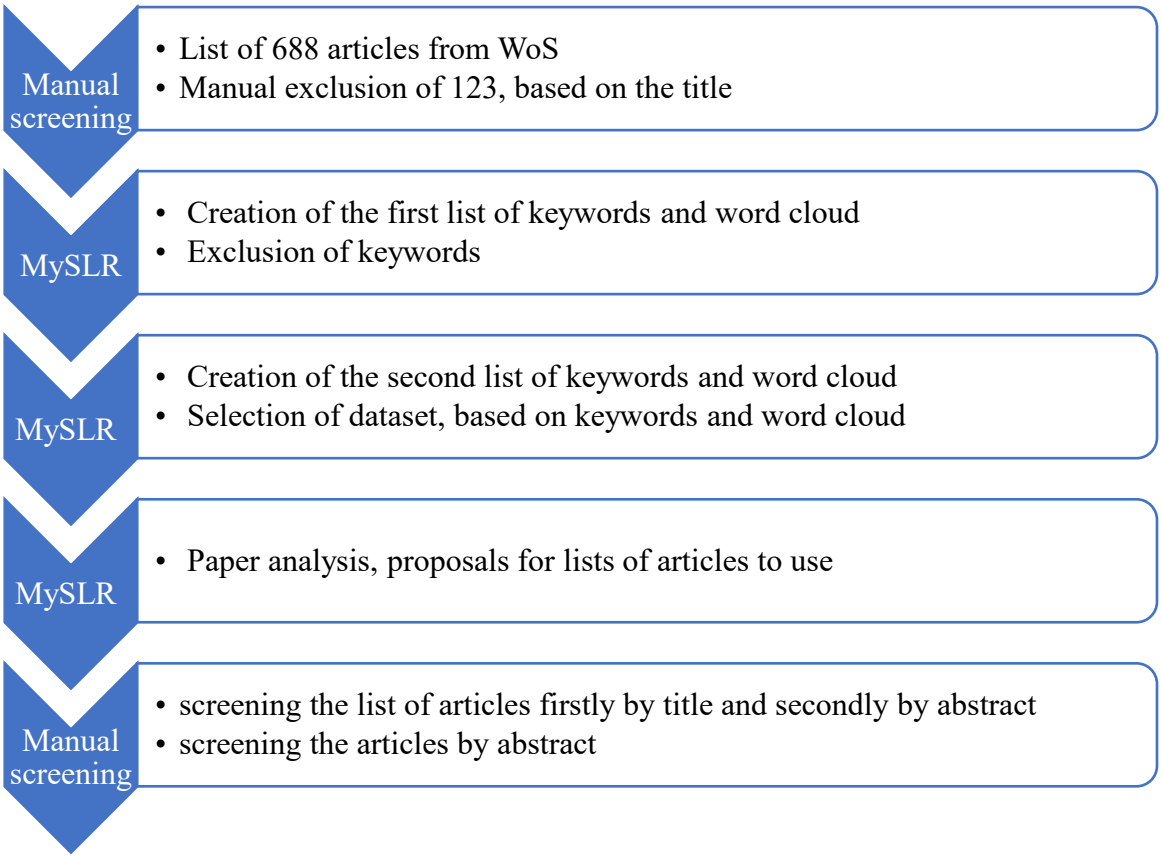

Figure 7. Process of data selection

The initial list from WoS consisted of 688 items. Of these, 123 articles with the term “Supply Chain” in the title were excluded, as the original scope of this study does not include external factors. After this exclusion, the dataset was a list of 565 articles, which was then uploaded to MySLR for further analysis.

The list of 565 articles was processed using the MySLR tool. MySLR analysed the provided list of articles and produced a result synthesis. In the first phase, the articles were visualized,

for example, by creating a word cloud and a list of the most relevant terms. Although articles with “Supply Chain” in their title had been removed from the dataset, the term still appeared among the most relevant terms, but not in the generated word cloud. The initial Word Cloud is shown as figure 8 below.

Figure 8. Word Cloud 1

As expected, the word “Resilience” appeared prominently in the initial word cloud, along with terms “Study”, Research” and “Organizational” The list of the top ten most relevant terms included “Resilience” and “Organizational”, “Organizations” but not “Development” nor “Develop”, as seen in table 2 below:

Table 2. Most relevant terms 1

Term	Value
resilience	1558
study	1166
research	792
organizational	614
management	583
findings	469
organizations	406
paper	398
model	349
data	345

The SLR Tool presented fifty (50) most relevant terms, with values ranging from 1558 to 198. At this stage, the user could refine the material by excluding certain terms from the list of the most relevant terms and thereby from the analysis. For example, terms such as “Supply”, “Chain”,“Study”, “Also”, “New” and “Paper” were excluded from the paper analysis.

After these adjustments, MySLR generated a new Word Cloud, which is presented in figure 9 below.

Figure 9. Words Cloud 2

The renewed list of most relevant terms included 32 terms, with the most relevant shown in the following table, table 3.

Table 3. Most relevant terms 2

Term	Value
resilience	1558
organizational	614
management	583
organizations	406
model	349
data	345
development	339
performance	338
business	328
leadership	345

This refined list formed the dataset for the second phase, paper analysis. In this phase, MySLR calculated the optimal number of topics for analysis, which was two. MySLR also calculated the coherence value, as shown in Figure 10.

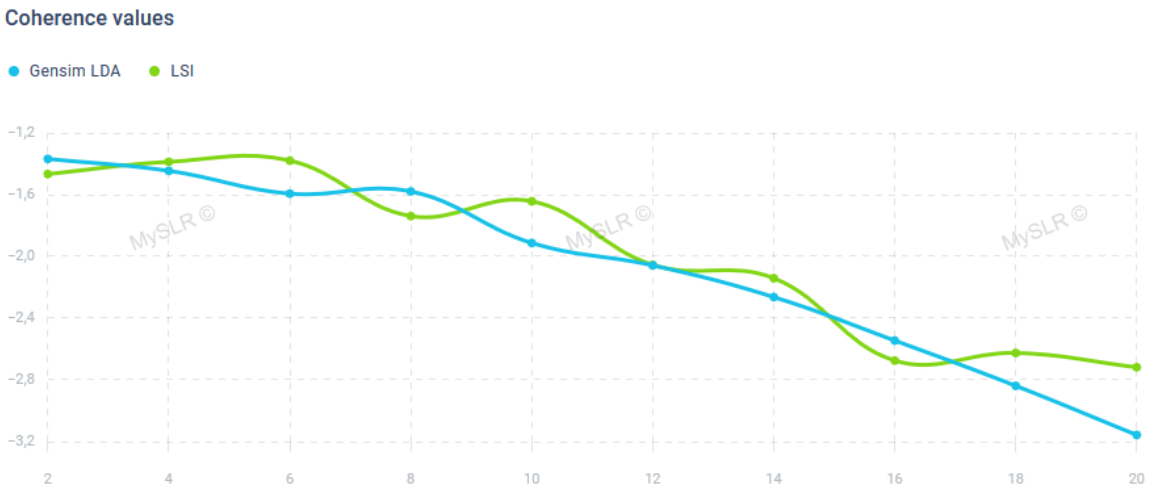

Figure 10. Coherence value, MySLR.

The LDA value was -1,2 and unfortunately, the LSI results were not available during the thesis process, so only LDA results were used.

The initial outcome of the MySL paper analysis divided the dataset into two topics, containing 275 and 298 articles, respectively. The corresponding word clouds are shown in Figure 11.

Figure 11. Word clouds of topics 1 and 2.

Both sets of articles proposed by MySLR were manually screened. The second set, the Topic 2 with 298 articles, was selected for this study because it contained nearly all the articles from Topic 1, plus additional material.

The initial manual screening involved reviewing the title and summary of each article. MySLR was able to display most abstracts in preview -mode, if not, the article was retained in the dataset at this stage. Articles whose title, keywords or abstract that did not include the terms resilience and organization(al), and/or development were excluded from further consideration.

This screening produced a dataset of 66 articles. Two of these 66 articles were no longer available in WoS, leaving 64 for further review. The abstracts of these 64 articles were read, and those not addressing the development of organizational development were excluded.

This phase reduced the number of articles to 28. The selection process is illustrated on Figure 12.

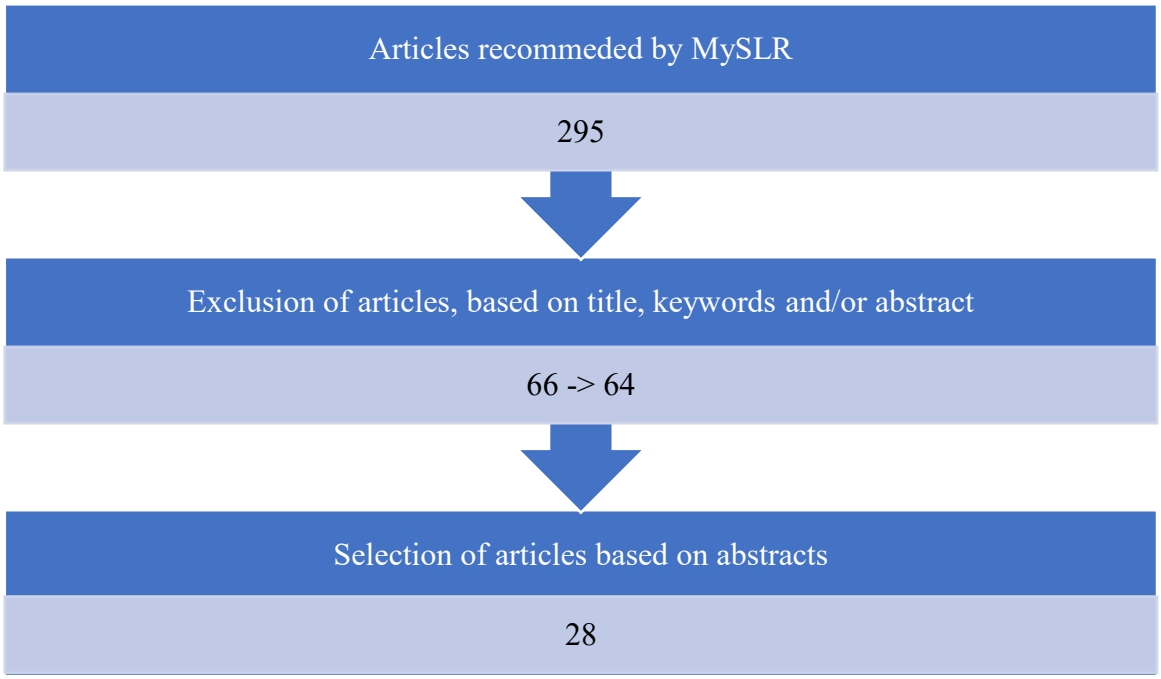

Figure 12. Process of selection of the articles.

These 28 articles constitute the research material for this thesis. The findings are presented in the following chapter.

4 Findings

This section describes the research and discusses its key findings of it. The first subchapter, “Descriptive findings” focuses on the classification of the material and highlights noteworthy observations. The second subchapter, “Thematic findings” examines the main themes identified in the material.

4.1 Descriptive findings

The selected articles were categorized, for example, article type. Of the 28 articles, none were review articles, there is a trend in number of published articles included in this thesis since 2019, as shown in the figure below.

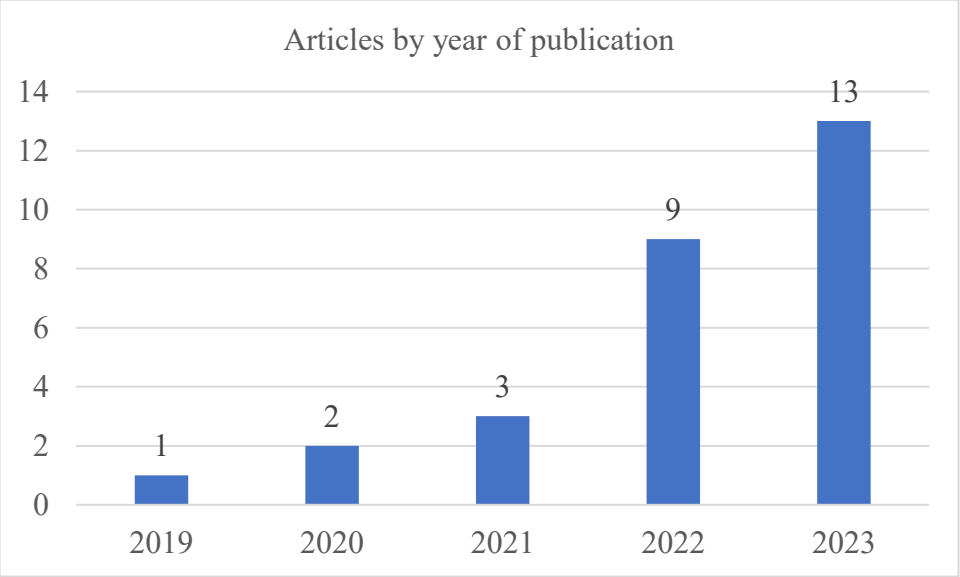

Figure 13. The articles by the year of publication.

Interest in research on this subject appears to have increased significantly during this five-year period. Of the 28 articles, only two were case studies, and the lines of business covered by these studies are listed in the following table.

Table 4. Lines of business covered in the 28 articles

Line of business	**Number of articles**
Manufacturing	4
Construction	2
Service	2
Tourism	2
Banking	1
Hospitality	1
Retail	1

Most articles (15 out of 28) do not focus on a specific line of business, but there are several geographically limited. For example, there are studies of Lithuanian organizations (Bartuseviciene et al. 2022), Chinese listed manufacturing companies (Liu et al. 2023), Spanish hotels (Melián et al. 2020), and Egyptian SMEs. SMEs were the subjects of four articles.

A few noteworthy observations emerged from the review of the articles' key terms. In total, this set of articles included 145 keywords, the ten most common keywords are presented in Table 5 below.

Table 5. The top 10 keywords of the 28 articles

Keyword	**In number of articles**
Organizational (organisational) resilience	18
Resilience	6
COVID-19 / COVID-19 Pandemic	6
Crisis	3
Dynamic capabilities	3
Innovation	3
Small and medium sized enterprises / SMEs	3
Dynamic capabilities theory	2
Organizational learning	2
Performance	2

One interesting finding is that, of the 28 articles, only two included the word "*develop**" in their listed keywords. These were "Organization Development & Change" (Wang et al. 2022) and "Human resource development (HRD)" (Mitsakis 2020).

Another noteworthy observation is that the keywords "Entrepreneurial resilience" and "Supply chain resilience" also appeared. Although these topics are excluded from the main scope of this thesis, the articles "Enhancing social responsibility and resilience through entrepreneurship and digital environment" (Awad & Martín-Rojas 2023) and "Beyond the COVID-19 pandemic: what builds organizational resilience capacity?" (Matysek-Jędrych et al. 2022), were examined in detail at this point. Both were included in the research material, as Awad & Martín-Rojas (2023) study focuses on the relations of corporate social responsibility, digital technologies and organizational resilience, while Matysek-Jędrych et al (2022) identifies three resources (financial resources, digitalization level and supply chain collaboration) that contribute to organizational resilience.

Of the 28 articles, ten identified Covid-19 as a factor influencing the research, with a focus on either survival during the pandemic or post Covid-19 recovery. A few articles, such as Wang et al (2022) examine the development of organizational resilience in both pre- and post-crisis conditions. Yang et al (2011) article addresses all three categories of organizational resilience, (before, during and after change), but in this article, the development of organizational resilience in this article is closely related to supply chain, as the survey covers retail organization. However, the article also discusses other variables, such as individual resilience and organization's key capabilities, which contributed to the development of organizational resilience.

Table 6. Three categories of organizational resilience covered in 28 articles

Categories	**Number of articles**
Before / Anticipation	17
During / Coping	25
After / Adaptation	9

The categories addressed in recent studies may have been influenced by COVID-19, as the pandemic had major and unparalleled impact on, for example, the hospitality and tourism

industries. It could be possible that studies focusing on the “After/Adaptation” category will be published more frequently after the pandemic, as researchers may increasingly turn their attention to this category.

Of the 28 articles, most focus on the development of organizational resilience at the organizational level, while some address both the individual and organizational level, for example Liu- Lastres & Cahyanto (2023). The fourth dimension, systemic resilience, is not covered in these articles. Systemic resilience is excluded from this thesis. Table 7 below presents the dimensions of organizational resilience found in the reviewed literature.

Table 7. Dimensions of organizational resilience covered in 28 articles

Dimension	**Number of articles**
Organization	28
Team	1
Individual	6

Some articles cover more than one dimension of organizational resilience development, but most of the articles cover only the organizational level. Individual level resilience in context of the supply chain (e.g. Mishra et al. 2022) is not included in the table. The emphasis on the organizational dimension may be explained by the temporal proximity of the COVID-19 pandemic, organizations or even entire industries may have been severely affected; therefore researcher may have had more focus on organizational coping mechanisms and capabilities.

It is noteworthy that only two of the 28 articles that reported no factors, among those studied that would have impacted the development organizational resilience. First is the study by YahiaMarzouk, & Jin (2023) examines environmental scanning and its effect on organizational resilience development. The article did not find either a positive nor negative correlation between environmental scanning and organizational resilience development. However, the study states that organizational learning and innovation facilitates the relationship between environmental scanning and organizational resilience. This article is included in the set of literature used, although its contribution to this study may be minor. The second is Bartuseviciene et al. (2022) study that presents three models to assess

organizational resilience. This article is also included in the dataset, though it might not provide relevant information to this study.

4.2 Thematic findings

This chapter presents the main findings of the 28 articles reviewed in this study. Most of the articles focu on the During/Coping category of organizational resilience and primarily address the Organization dimension. The literature identifies factors that there that have positive, neutral (no impact), or negative effect on the development of organizational resilience. As most findings relate to positive impacts, these are discussed first.

Factors that positively influence the development of organizational resilience include, for example, company strategies (Huang & Faboudi Jahromi 2021), strategy and change (Melián-Alzola et al. 2020), IT capabilities (Trieu 2022), and digital transformation (Mishra et al. 2020). The key identified promoting development of organizational resilience are summarized in the table below. Themes excluded from this thesis, such as supply chain and entrepreneurship, are not included in the list of key factors.

The following table provides an overview of all the articles included in this study and highlights the main findings from each article that support the development of organizational resilience.

Table 8. List articles and key finding that promote organizational resilience

Author(s), publication year	**Finding(s)**
Al Omoush et al. 2023	Digital transformation, innovations, organizational learning
Awad & Martín-Rojas 2023	Dynamic capabilities, Corporate social responsibility, digital technologies
Bartuseviciene et al. 2022	-
DesJardine et al. 2019	Strategic and tactical social and environmental practices
Engelen et al. 2023	Innovations
Huang & Farbioudu Jahromi 2021	Resources, Strategies
Jiang et al. 2021	Dynamic capabilities
Juliana et al. 2023	Digital adaptation, Organizational agility, Customer orientation
Liu et al. 2023	Digital orientation
Liu-Lastres & Cahyanto 2023	Innovation & collaboration, Leadership & decision making, Communications
Matysek-Jędrych et al. 2022	(Access to) Capital, Digitization, SC collaboration
Melián-Alzola et al. 2020	Collaborative initiatives
Mishra et al. 2022	Digital transformation
Mitsakis 2020	HRD practices
Ozanne et al. 2022	Social capital, Dynamic capabilities
Shao & An 2022	(Critical) Strategic resources, soft asset, VRIN
Swaminathan 2022	Diverse capabilities
Sincora et al. 2023	Business processes
Tortorella et al. 2023	Soft lean practices
Trieu et al. 2023	IT Capabilities, Government support, Dynamic capabilities
Macchi Silva & Ribeiro 2022	Human Resource Management, Individual competencies, Risk management
Wang & Wang 2023	Employee resilience
Wang et al 2023	Institutional factors, Resources
Wu et al 2023	Knowledge coupling
Yang et al 2021	Digital constructs, System management
Zhang et al 2023	Reconstruction of existing resources
You et al 2023	Dynamic capabilities, VRIN and non-VRIN resources
YahiaMarzouk & Jin 2023	-

Definitions to the findings of the dataset are described in more detail in the following table, Table 9.

Table 9. Definitions of key findings

Finding	Definition	Author(s)
(Access to) Capital	Access to capital, human and financial	Matysek-Jędrych et al. 2022
Business processes	Structured and managed activities to produce results	Sincora et al. 2023
Collaborative initiatives	Co-operative endeavours to cope	Melián-Alzola et al. 2020
Communications	Precise and efficient external and transparent internal communication	Liu-Lastres & Cahyanto 2023
Corporate social responsibility	Ethically, socially and environmentally conscious business practices	Awad & Martín-Rojas 2023
Customer orientation	Prioritizing customers' demands in business strategy	Juliana et al. 2023
Digital adaptation	Digital initiatives to use and benefit from digital technology	Juliana et al. 2023
Digital constructs	Digital technologies, services and capabilities	Yang et al 2021
Digital orientation	Strategy to leverage digital technology	Liu et al. 2023
Digital transformation	Digitalization of operations and tools to gain and process information. Minimize resource usage.	Al Omoush et al. 2023 Mishra et al. 2022
Digital technologies	E.g. Social media, IA, Big Data, cloud technologies, digital services	Awad & Martín-Rojas 2023
Digitization	Digital technologies as integral part of processes	Matysek-Jędrych et al. 2022
Diverse capabilities	Wide range of capabilities to utilize	Swaminathan 2022
Dynamic capabilities	Adaptable organizational capabilities, internal and external resources that can be integrated, build and reconfigured. Builds and preserves competitive advantage.	Awad & Martín-Rojas 2023 Jiang et al. 2021 Ozanne et al. 2022 Trieu et al. 2023 You et al 2023
Employee resilience	Psychological and work resilience	Wang & Wang 2023
Government support	Access to resources and prospects	Trieu et al. 2023
HRD Practices	Human resource development strategies, actions and policies	Mitsakis 2020
Human Resource Management	Strategic and practical human resource management	Macchi Silva & Ribeiro 2022
Individual competencies	Skills, knowledge, abilities, behaviors	Macchi Silva & Ribeiro 2022

Innovations	Redesigning and improving, R&D, patents and new concepts and ideas	Al Omoush et al. 2023 Engelen et al. 2023
Innovation & collaboration	Personal and collaborative efforts to solve problems	Liu-Lastres & Cahyanto 2023
Institutional factors	Structure of organization, management	Wang et al 2023
IT Capabilities	Ability to leverage IT resources	Trieu et al. 2023
Knowledge coupling	Process and result of combining and connecting knowledge elements form different sources	Wu et al 2023
Leadership & decision making,	On time and well implemented decisions, support of top-down management	Liu-Lastres & Cahyanto 2023
non-VRIN	Assets that are not considered valuable, rare, imitable and non-substitutable	You et al 2023
Organizational agility	Ability to react and act effectively	Juliana et al. 2023
Organizational learning	learning capabilities ensures responding to change and adaptation of new e.g. operating models	Al Omoush et al. 2023
Reconstruction of existing resources	To realign and restructure resources	Zhang et al 2023
Resources	Stock of different types of assets	Huang & Farbioudu Jahromi 2021 Wang et al 2023
Risk Management	Process to identify, to prevent and prepare for risks	Macchi Silva & Ribeiro 2022
SC Collaboration	Supply chain collaboration	Matysek-Jędrych et al. 2022
Social capital	The quality of relationships within a network of connections in a social structure	Ozanne et al. 2022
Soft lean practices	Human centred aspects of lean management	Tortorella et al. 2023
Strategic and tactical social and environmental practices	Strategic and tactical practices and actions to improve social or environmental conditions.	DesJardine et al. 2019
Strategic resources	Specific, critical assets	Shao & An 2022
Strategies	Plans of actions to achieve set goals	Huang & Farbioudu Jahromi 2021
Soft asset	Most valuable and irreplaceable resources	Shao & An 2022
System Management	Administration and maintenance	Yang et al 2021
VRIN	Assets that are considered valuable, rare, imitable and non-substitutable	Shao & An 2022 You et al 2023

The following subchapters discuss the main findings of the 28 articles.

4.2.1 Dynamic capabilities

Although organizational resilience can be seen as dynamic capability (Swaminatha 2022), several articles mention the positive impact of dynamic capabilities on the development of organizational resilience (Awad & Martín-Rojas 2023; Jiang et al. 2021; Ozanne et al. 2022). Dynamic capabilities can be strengthened by an organizational culture that embraces innovations and experimentation, as well as by establishing organizational structures, processes, and routines that enable organizations to anticipate changes, seize opportunities and adapt existing resources and capabilities (Awad & Martín-Rojas 2023). Dynamic capabilities influence the formation of organizational resilience (Zhang et al. 2022).

There are three steps of dynamic capabilities sensing, seizing, and transforming (Jiang et al. 2021). These steps can be applied to both opportunities and threats in organizational environment (Awad & Martín-Rojas 2023). The three steps from the foundation of Jiang et al. (2021) dynamic resilience framework, which is linked to disaster management. Ozanne et al. (2022) discusses how the sensing, seizing, and transforming of dynamic capability enables social capital to be converted into organizational resilience. In Ozanne et al. (2022) article dynamic capabilities are seen as a mediator between internal and external social capital and organizational resilience. This mediating role is also found in You et al. (2023) article, where this role is more significant in the relationship between non-valuable, rare, inimitable and non-substitutable (non-VRIN) resources and organizational resilience than in the relationship between valuable, rare, inimitable and non-substitutable (VRIN) resources and organizational resilience.

Strategic flexibility, one of dynamic capabilities, is discussed in by Shao & An (2022), who examine the impact of hard and soft assets on organizational resilience. Their study finds that strategic flexibility enhances organizational resilience. Juliana et al. (2023) indicate that organizational agility has a positive and significant effect on organizational resilience, thus, the ability to act efficiently, either by anticipating or by stopping unexpected events, is essential for the organization. According to Juliana et al. (2023), the higher the level the

customer orientation in an organization is, the more agile and capable it is of facing changes.t Jiang et al. (2021) state that "*organizational resilience is not static status or trait but a dynamic and cyclical process*". Depending on the stage of change, before, during or after, the organization needs to adapt different dynamic capabilities to ensure its survival.

The theory of Dynamic capabilities is utilized in the study by Sincorá et al. (2023) "*Developing organizational resilience from business process management maturity*". The study examines how business process management maturity positively impacts organizational resilience. Their findings suggests that organizations aiming to be resilient need to develop their business routines, supported by process management and information technology, as well as resilience capabilities that address anticipation, adaptation, and recovery stages of unexpected events, this development is necessary to maintain control ovel structures and functions and to ensure continuity of operations. Another study (Tortotella et al. 2023) states that lean management, particularly soft lean practices, has a positive impact on organizational resilience.

Following table presents the distribution of the research results regarding the impact of dynamic capabilities on the categories and dimensions of organizational resilience.

Table 10. Dynamic capabilities: Findings by resilience categories and dimensions

Category / Dimension	**Before / Anticipation**	**During / Coping**	**After / Adaptation**
Organization	2	7	2
Team			
Individual			

According to this dataset, dynamic capabilities can positively affect organizational resilience in all dimensions at the organizational level. However, for the team and individual levels, no findings are reported in this study.

4.2.2 Digitalization

Digitalization, in its many forms, emerges as one of the key findings of the dataset. It can be viewed as a tool for developing organizational resilience (e. g. Awad & Martín-Rojas 2023), as capital and capability to adopt and innovate (Huang & Farboudi Jahromi 2021), or as a pivotal strategic factor enabling organizational resilience (Liu et al. 2023). The following sections detail the aspects of digitalization identified as factors affecting organizational resilience.

Digital adaptation: A study of the Indonesian banking sector indicates that digital adaptation has a positive and significant impact on organizational resilience. Customer orientation also has a positive and considerable influence on digital adaptation. (Juliana et al. 2023) Changes in the operational environment require rapid adaptation of digital technologies, such as social media, that enables to connect with customers and provide services (Jiang, et al. 2021).

Digital constructs: Digital constructs have a positive impact on organization's ability to respond to crises (Yang et al. 2021).

Digital orientation: Digital orientation is identified as a critical precursor to organizational resilience (Liu et al.2023).

Digital technologies: The utilization of digital technologies enables organizations to be more resilient (Mishra et al. 2022). Digital technologies increase SMEs' organizational resilience by "*driving innovations, enhancing stakeholder relationships, fostering a culture of learning and enhancing reputation and brand image*" (Awad & Martín-Rojas 2023).

Digital transformation: Digital business transformation in SMES has a significant impact on organizational resilience. Organizational learning plays a key role in digital transformation. (Al Omoush et al. 2023) Digital transformation has a positive effect on resilience development (Mishra et al. 2022). The capability to transform traditional services into digital form increases organizations' survival rate during the crises and enables future success (Yang et al. 2021).

Digitalization level: To be agile and flexible, organizations need to have access to real-time information, such as daily cash flow (Swaminathan 2022).

IT Capabilities: IT Capabilities strengthen the dynamic capabilities and overall performance of an organization. They promote organizational resilience by enabling organizations to quickly adapt and respond to changes in their business environment. (Trieu et al. 2023)

Digital technologies and their level of adaptation have had a profound impact on the resilience building of organizations during the COVID-19 pandemic. (Al Omoush et al. 2023; Yang et al. 2021)

The distribution of findings, across categories and dimensions of organizational resilience, is presented in the following table.

Table 11. Digitalization: Findings by resilience categories and dimensions

Category / Dimension	**Before / Anticipation**	**During / Coping**	**After / Adaptation**
Organization	3	8	3
Team			
Individual			

Digitalization is found to promote organization resilience in all its categories at the organizational level. The literature reviewed focuses primarily on the during/coping phase and the organization dimension of resilience. No positive effects of digitalization on team or individual dimensions were found.

4.2.3 Resources

A critical strategic resource can be seen as a specific asset that plays a key role in organizational resilience (Shao & An 2022). Resources can be divided into two groups: valuable, rare, inimitable and non-substitutable aka VRIN and non-VRIN resources, which are more general in nature (Shao & An 2022; You et al. 2023). VRIN assets are those that build unique competitiveness (Shao & An 2022). The article by Shao & An (2022) divides

assets into soft (technologies, knowledge, human capital) and hard (physical assets) assets and examines their influence on organizational resilience.

According to the literature, several types of resources have a substantial impact on the development of organizational resilience:

Financial: Raising financial resources is recommended as a cushion for tough market times (Swaminathan 2022). In service sector companies, access to financial capital is crucial for building resilience (Huang & Farboudi Jahromi 2021).

Customer orientation: Focusing on the customer not only improves organizational performance but also benefits organizations during difficult times (Juliana et al. 2023)

Human capital: Both managers and employees play a major role in resilience-building strategies. Preferred leadership styles in service sector organizations are participative, transformational, and sustainable. Employees, with their diverse cognitive and behavioural elements, are among the facilitators of resilience development. (Huang & Farboudi Jahromi 2021)

Organizational learning: Innovations are crucial for an organization's survival, and they derive from organizational learning (Al Omoush et al 2023).

Social capital: Internal social capital has a direct impact on organizational resilience, while external social capital influences the customer focus of the organization (Ozanne et al. 2022). Social capital consists of three components: (1) networks and ties between individuals or groups, both internal and external; (2) trust developed within the networks and (3) benefits gained from the networks. Social capital has a positive impact on business resilience. (Huang & Farboudi Jahromi 2021)

Technological capital: Technological capital can be divided into tangible (e.g. technology systems) and intangible (e.g. data structures) assets. Technology facilitates business resilience development, and technological change can occur as technological capital and technological capacity are linked. Innovative services and products in the service sector emerge from

> technological capacity, which is built on organizational knowledge and experience. (Huang & Farboudi Jahromi 2021).

In uncertain operating environment, the reconfiguration of resources has a strong positive effect on organizational resilience (Zhang et al. 2022). Wang et al. (2022) also indicate that resources play a significant role in improving organizational resilience.

The Theory of Conservation of Resources was used in Wang and Wang (2023) study on employee resilience in construction projects. This stress theory highlights the crucial role of resources in human behaviour; in this context, organizational resilience is seen as a resource-based capability. Individuals with greater psychological resilience are better able to deal with pressure, but employee resilience is not only psychological resilience, but it is also work resilience. Individual and organizational resilience have a complex relationship, and in times of crisis, the work resilience of an individual positively impacts the organizational resilience. As the study focused on a project organization, the positive impact was observed in that context.

Another project-related finding concerns the relationship between resources and institutions. In projects, resources have major impact on promoting reactive organizational resilience, while institutional factors have a greater impact on proactive organizational resilience. By combining resources and institutional factors, it is possible to build and improve organizational resilience. (Wang et al. 2022)

To successfully build resilience, various resources must be utilized. Huang & Farboudi Jahromi (2021) state that organizations need capital, such as financial, social, human, and technological. Macchi Silva and Riberto (2022) focus on the impact of Human Resource Management practices on organizational resilience. Their article introduces a macro-competence model for organizational resilience and indicates that Human Resource Management practices promote competencies needed to improve resilience. The study was conducted in a public organization, but the model could be adopted in future research.

The following table presents the distribution of the observations on the positive effects of resources on organizational resilience.

Table 12. Resources: Findings by resilience categories and dimensions

Category / Dimension	**Before / Anticipation**	**During / Coping**	**After / Adaptation**
Organization	6	6	4
Team			
Individual	1		

The findings indicate that resources have a positive impact on all categories of organizational resilience at the organizational level. There is only one finding of a positive effect of resources on the development of organizational resilience at individual level.

4.2.4 Organizational resilience strategy

Melián-Alzola et al. (2020) suggests that in tourism industry "*the hotel sector needs to analyse past, present and future information and include the perspectives of key internal and external stakeholders during strategic planning".* Huang & Farboudi Jahromi (2021) introduce resilience-building strategies, the resources needed for resilience building and the success factors for these strategies. They identify five strategies, one of which is supply chain optimization. The other four strategies are:

> **Market orientation**: During and after crisis, it is crucial to collect and distribute market intelligence in response to market demand.
>
> **Strategic corporate reorganization**: To strengthen one's market position during or after crisis, it is important to seek new partnerships.
>
> **Innovation**: After a crisis, innovations in marketing, process, products/services, and organization play a role in organization's growth
>
> **Business model transformation**: Addressing identified market demand with new technology provides a competitive advantage during or after a crisis.

The success factors of these strategies relate to the following themes: "*organizational structure, leadership style, communication among employees, interaction with stakeholders, knowledge management, technology utilization, and adoption of flexible processes".* (Huang & Farboudi Jahromi 2021)

A strategic and proactive approach in Human Resources can promote not only individual resilience but also contribute to organizational resilience development. Furthermore, Human Resources Development (HRD) strategies, policies and plans focusing on the individual and/or organizational level could improve and help identify an organization's capacity for resilience. HRD resilience is developed through learning and training, which enhances both individual and organizational resilience. (Mitsakis 2020)

Strategies to ensure organizational resilience development are addressed in the source literature across two dimensions and categories, as presented in the following table.

Table 13. Strategy: Findings by resilience categories and dimensions

Category / Dimension	**Before / Anticipation**	**During / Coping**	**After / Adaptation**
Organization		1	
Team / Project			
Individual	1	1	

Strategies are found to promote resilience in both individual and organizational dimensions: individual resilience in the before/anticipation and both individual and organizational resilience during / coping phase of organizational resilience development.

4.2.5 Organizational learning and organizational culture

Organizational resilience is built on the continuous development of the organization, and through innovations. the organization becomes more agile and achieves a competitive advantage (Yang et al. 2021). For SMEs, innovation is needed to ensure survival during the pandemic and to enable future growth (Al Omoush et al. 2023). To overcome current and future problems, organizations need to be innovative in creating new solutions (Liu-Lastres & Cahyanto 2023). During a crisis, managers should be willing to innovate, as this supports the organization's development capabilities (Yang et al. 2021). Innovative strategies are not developed without collaboration with multiple stakeholders, both external and internal (Liu-

Lastres & Cahyanto 2023). The article by Huang & Faboudi Jahromi (2021) includes innovation as one of the five strategies that promote organizational resilience development.

Organisational learning and organizational culture can foster organizational resilience, as organizations that are agile and promote an entrepreneurial mindset are more capable of facing challenges and learning from mistakes (Awad & Martin-Rojas 2023). Organizational learning, combined with, for example, innovations, has a positive impact on organizational resilience (YahiaMarzouk & Jin 2023).

Organizational learning and organizational culture have a positive effect on organizational resilience (Awad & Martin-Rojas 2023), but organizational memory has shown to be inapplicable during turbulent times and is more suitable for daily decision making and routine problem solving. Therefore, organizational memory has no positive effect on the development of organizational resilience. (Shao & An 2022)

Although YahiaMarzouk & Jin (2023) reveal a beneficial relationship between organizational learning and organizational resilience development, their initial research on the role of environmental scanning on organizational resilience indicates that environmental scanning has no direct impact on organizational resilience. Mitsakis (2020) indicates that learning and training, as HRD processes, promote both individual and organizational level resilience. There are organizational competencies that promote individual resilience, and individual competencies that promote organizational resilience (Macchi Silva & Ribeiro 2022).

The following table presents the dimensions and categories of organizational resilience that have been found to benefit from organizational learning and organizational culture.

Table 14. Organizational learning and culture: Findings by resilience categories and dimensions

Category / Dimension	**Before / Anticipation**	**During / Coping**	**After / Adaptation**
Organization		2	
Team			
Individual	1	1	

Organizational learning and organizational culture have a positive impact on organizational resilience development on the during / coping phase, in both the organizational and individual dimensions. At the individual level, a positive impact is found also in the before / anticipation phase, while no impact is found at the team level.

4.2.6 Organizational resilience development - analytical findings

This sector analyses how the literature addresses the factors that promote the development of organizational resilience. focusing on both the dimensions (organization, team, individual) and categories (anticipation, coping, adaptation) of organizational resilience. Table 15 summarizes the main findings by organizational resilience dimension and category.

Table 15. Main findings by resilience categories and dimensions

Category / Dimension	**Before / Anticipation**	**During / Coping**	**After / Adaptation**
Organization	Dynamic capabilities Digitalization Resources	Dynamic capabilities Digitalization Resources Resilience strategy Organizational learning and culture	Dynamic capabilities Digitalization Resources
Team / Project			
Individual	Resources Resilience strategy Organizational learning and culture	Resilience strategy	

As noted in the Descriptive Findings chapter, the emphasis in the dataset is on the coping phase and on the organisational level. The same observation applies to the key findings. The Majority of findings are found to be in the organisational level, and notable, none of the kay findings in this study address the team level, in any dimension, of organizational resilience. The dataset does not provide a comprehensive picture of the potential impact that team level resilience could have on the development of organizational resilience. Individual level is mainly discussed in relation to resources (e.g. Huang & Farboudi Jahromi 2021), and HRD-strategies (Mitsakis 2020). The limited literature on this dimension may result in absence of

essential factors. Most of the literature focus on how organizations survive and adapt during crises, which may explain why team- and individual-level resilience receive considerably less attention in this dataset.

The majority of key findings fall within the organizational dimension and during/coping phase. Three major themes, dynamic capabilities, digitalization and resources are addressed across all categories and dimensions, although resources are also mentioned at the individual level. The before/anticipation and after/adaptation phases receive less attention the literature.

Dynamic capabilities, digitalization, and resources are the three major factors found to have a positive impact across all categories (anticipation, coping, adaptations) and dimensions (organizational, team, individual), with their impact being particularly noticeable at the organizational level.

The distribution of key findings closely follows the findings in Table 6 and Table 7, subchapter 4.1. Descriptive Findings. If the literature would be on other era, both the key findings and the distribution of them could be diffent.

5 Conclusions

This study is a systematic literature review with the main objective of identifying and analysing the latest findings on the development of organizational resilience. The research question was “What does the latest research disclose about the organizational resilience development?” The original dataset was selected in January 2024 and initially analysed and categorized using the AI tool MySLR. The dataset was processed both with MySLR and through manual screening, resulting in a final set of 28 articles.

It is possible, that the dataset is missing relevant studies. For example, the article by Zhang et al (2022) “Organizational resilience in development: A Systematic review based on bibliometric analysis and visualization” is not included because it is not listed in Management Category in WoS. Some of the articles used in this SLR focus on a very limited line of business, geographical area, or have a small sample size. The unintended exclusion of relevant sources, as well as the restrictions on the sources used, may have affected the outcome of this thesis.

Change is identified as the main driver of organizational resilience development (Duchek 2020). External forces are central in the literature reviewed, which is not surprising given that the material was published between 2019 and 2023, during the COVID-19 pandemic. Had the literature reviewed focused on a different era, the factors identified to promote the development of organizational resilience might have been different.

Most articles focused on the development of organizational resilience at the organizational level, fewer examined the individual, and only one the team level. The concentration of observations to the organizational level might have had an impact in the outcome of this thesis. Future studies might focus more on these two levels, which have less attention in this dataset. The same conclusion can also be drawn from the categories of organizational resilience covered by the dataset. Most of the articles examined the during/coping phase, few the before/anticipation phase and even fewer articles covered the aftermath aka the after/adaptation phase. After the Covid-19 pandemic has subsided, there could be a significant increase in the studies on organizational resilience and its development in the after/adaptation phase.

The 28 articles provide an interesting perspective on recent literature regarding the development of organizational resilience. The focus on this set of literature is on the survival, on the coping -phase (Duchek 2020), and on macro (organizational) (Borg et al 2022) dimension of resilience development. Previous research has not been particularly extensive, but this study found an increase in the number of publications, from one study in 2019 to thirteen studies in 2023. If this trend continues, research on the development of organizational resilience will likely increase significantly in the future.

Hamel and Välikangas (2003) study identified key resources that enable the development of organizational resilience. After about twenty-years, their list is largely valid. Resources such as technological capital may not have been that important in the early 2000's as they are now. However, financial (Swaminathan 2022), social (Ozanne et al. 2022), network (Huang & Farboudi Jahromi 2021), and intangible (Shao & An 2022), resources are still found in recent literature to have a positive impact on the development of organizational resilience. The only resource in Hamel and Välikangas (2003) study not mentioned in the literature used in this study is material resources. If this study had covered, for example, supply chain, material resources might have emerged as one of the main resources needed.

To utilize these resources, organizations could implement resilience development strategies in their operations (Huang & Farboudi Jahromi 2021). One of the four resilience building strategies is innovations (Huang & Farboudi Jahromi 2021), which plays and important role in organizational resilience development, particularly for SMEs (e.g. Al Omoush et al. 2023). Innovations had a major impact on organizational resilience development (Liu-Lasteres & Cahyanto 2023; Melián_Alzola et al. 2020).

The findings of the study indicate that organizations should ensure the development of organizational resilience by investing in dynamic capabilities (e.g. Sincorá et al. (2023), digitalization (e.g. Yang et al. 2021) and diverse resources (Huang & Farboudi Jahromi (2021). In practice, this could mean the continuous development of flexible processes (Huang & Farboudi Jahromi 2021), innovative solutions (Liu-Lastres & Cahyanto 2023), and the continuous development of individual competences (Macchi Silva & Ribeiro 2022). Organizations can use the results of this study to assess their own strengths and areas for development from a resilience perspective and to design strategies to prepare for and adapt to rapidly changing operating environments.

This study complements the previous literature by showing that the research field of organizational resilience development is fragmented, with the latest research particularly focused on the survival/coping phase and organizational level. Recent research brings a new perspective by emphasizing the importance of dynamic capabilities (e.g. Awad & Martín-Rojas 2023), digitalization (e.g.Jiang, et al. 2021, Swaminathan 2022) and resources (e.g. Wang et al. 2022) in the development of organizational resilience and presents strategies (Huang & Farboudi Jahromi 2021) that can be utilized in the development of organizational resilience. It also reveals research gaps related to the before/anticipation and after/adaptation categories and on team level of organizational resilience development.

This study answers the research question "What does the latest research disclose about the development of organizational resilience?" by showing that the development of organizational resilience is strongly influenced by dynamic capabilities, digitalization and resource management, but there are gaps in the research field. In addition, the findings suggest that studies published between 2019 and 2023 place particular emphasis on the development of organizational resilience in the during/coping phase and on the organizational level.

This study has revealed interesting research on the development of organizational resilience. The importance of organizational resilience and identifying the factors that promote the development of organizational resilience will not decline in the future. The world, and individual organizations, will face more uncertain times and rapid changes in the operating environment, and the need to be resilient will likely remain one of the key factors in survival and success. Further research can support organizations to find the right methods and resources to develop their resilience. Organizations and scholars alike can benefit from continued research of organizational resilience and the mechanisms and strategies that develop it.

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